

JPRS 75507

16 April 1980

# **USSR Report**

**ECONOMIC AFFAIRS**

**No. 920**

**FBIS**

**FOREIGN BROADCAST INFORMATION SERVICE**

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.

16 April 1980

USSR REPORT  
ECONOMIC AFFAIRS

No. 920

## CONTENTS

## PAGE

## INVESTMENT, PRICES, BUDGET AND FINANCE

RSFSR Finance Minister States 1980 Tasks  
(A. A. Bobrovnikov; FINANSY SSSR, Feb 80) ..... 1

Kazakh Official Proposes Ways To Increase Budget Revenues  
(Ye. Zh. Derbisov; FINANSY SSSR, Feb 80) ..... 17

## ECONOMIC MODELING AND COMPUTER TECHNOLOGY APPLICATION

Gosplan ASPR First Line in Place, Operating  
(V. B. Bezrukov, Ya. M. Urinson; EKONOMIKA I  
MATEMATICHESKIYE METODY, Jan-Feb 80) ..... 25

## REGIONAL DEVELOPMENT

Aganbegyan on Problems of Developing Siberian Resources  
(A. G. Aganbegyan; MATERIAL' NO-TEKHNICHESKOYE  
SNABZHENIYE, Feb 80) ..... 40

## INVESTMENT, PRICES, BUDGET AND FINANCE

### RSFSR FINANCE MINISTER STATES 1980 TASKS

Moscow FINANSY SSSR in Russian No 2, Feb 80 pp 3-15

[Article by RSFSR Finance Minister A. A. Bobrovnikov: "The RSFSR's Finance Authorities in the Final Year of the Five-Year Plan"]

[Text] The Soviet country has embarked on the final year of the 10th Five-Year Plan in an atmosphere of the working people's high political and labor activeness, nationwide struggle for implementation of the historic decisions of the 25th congress of our party and widespread socialist competition for a worthy greeting of the 110th anniversary of the birth of Valdimir Il'ich Lenin and for making 1980 a year of shock and Lenin-style work.

The decisions of the CPSU Central Committee November (1979) Plenum and the propositions and conclusions expounded in the speech at the plenum by Comrade L. I. Brezhnev, general secretary of the CPSU Central Committee and chairman of the USSR Supreme Soviet Presidium, comprehensively analyze our economy's development in the 4 years of the five-year plan, set the tasks for the coming year and the long term and reveal shortcomings and uncover bottlenecks and indicate the paths for surmounting them.

The Second Session of the USSR Supreme Soviet of the 10th Convocation ratified the plan of economic and social development and the state budget of the country for 1980. A big new step forward will be taken along the path of the creation of the material-technical base of communism. The plan and the budget demonstrate more strikingly than ever the peaceful aspiration of our party and people.

Fulfilling the historic decisions of the 25th party congress and subsequent CPSU Central Committee plenums and the tasks advanced by Comrade L. I. Brezhnev on fundamental issues of the country's economic and social development, the working people of the RSFSR, together with the entire Soviet people, have extensively developed socialist competition for an increase in production efficiency and work quality and the successful fulfillment of the scheduled targets.

Four years of the 10th Five-Year Plan are behind us. Much has been achieved in the sphere of the republic's economy and culture in this time. In 1979 national income channeled into consumption and accumulation increased by more than 19.3 percent, and four-fifths of it is channeled directly into increasing the people's well-being.

The republic economy's fixed production capital will have grown 33.7 percent compared with the Ninth Five-Year Plan. Industrial production increased 3 percent in 1979. The production of industrial products grew 18.8 percent in the 4 years of the five-year plan as a whole. More and more consumer goods are being produced, and there has been a broadening in their assortment and an improvement in their quality.

Despite the unfavorable weather conditions, 91.7 million tons of grain were harvested last year thanks to the intensive labor of the kolkhoz members and sovkhoz workers and the organizing activity of the party, soviet and economic organs.

There was an appreciable rise in the people's living standard, and real income per capita increased 2.5 percent, and 14 percent over the 4 years of the five-year plan. The average monthly wage of workers and employees in this period increased 12.9 percent, and kolkhoz members' remuneration increased 22 percent; there will have been a increase in the wages of 18 million workers and employees in the five-year period. In 1979 the social consumption funds rose to R54.6 billion. Apartment houses with a total area of approximately 240 million square meters were commissioned.

The growth of the economy was also reflected in the growth of the state budget. Whereas in 1965 the RSFSR budget amounted to R34.1 billion, in 1979 it amounted to R68.2 billion, that is, it had doubled. The dynamic development of the sectors of the economy is creating the essential foundation of a further increase in the resources of the economy and budget revenue, which made it possible to draw up a budget showing a growth of 3.6 percent compared with last year.

The 11th Session of the RSFSR Supreme Soviet of the Ninth Convocation ratified a budget of R70.7 billion. Financial resources in the amount of approximately R140 billion are to be mobilized on the republic's territory in 1980. Furthermore, it is essential that the State Insurance Main Administration authorities secure the receipt of R7 billion with respect to all types of insurance. This emphasizes once again the RSFSR's big role in the fulfillment of the country's fiscal plan.

Finance workers are in a decisive sector of implementation of the party's economic policy. The 1980 budget was drawn up by proceeding from the guidelines of the intensive development of the economy, high qualitative and quantitative final work results and an increase on this basis of cash accumulations in the economy and budget revenue.

A further growth in revenue from socialist enterprises and economic organizations in the form of turnover tax and payments from profit--R62.2 billion or 88.1 percent of the republic's total budget revenue--is envisaged.

Profit is, as is known, a principal source of revenue. It is to amount to R23.4 billion, and R10.5 billion, moreover, will be left at the disposal of the economic bodies for their own needs, primarily for the further expansion of production and material stimulation.

Payments from profit and other budget revenue from industrial enterprises and economic organizations have been set at R16.6 billion. The bulk of them--R7.9 billion--will be obtained from industry and construction. Considerable amounts will also be contributed by enterprises and organizations of the Ministry of Trade--R2.3 billion--housing and municipal services--R2.1 billion--transportation--R1.6 billion--and procurements R800 million.

In accordance with the directives of the RSFSR Council of Ministers, a considerable amount of work has been done aimed at increased social production efficiency and an increase in budget revenue on this basis. Measures have been implemented in many production associations and at enterprises to introduce new equipment and modern techniques, improve the use of production capacity and enhance product quality.

Thus in 1979 the Dmitrovskoye "Yunost'" Industrial-Garment Association instituted the production of new clothing models, produced R22.6 million worth of goods bearing the Sign of Quality and obtained an additional profit of R243,000 thanks to new equipment. Such enterprises as the Kupavinskaya Order of Lenin Thin-Cloth Factory imeni I. N. Akimov and the Moscow "Sokol" Industrial-Garment Association are successfully fulfilling the 10th Five-Year Plan quotas, improvement product assortment and quality and insuring the economical expenditure of raw materials and goods and fulfillment of the accumulation plan and budget obligations.

However, a number of enterprises is failing to make full use of available potential for a growth in the volume and an increase in the efficiency of industrial and agricultural production and failing to meet the targets for an increase in labor productivity and a reduction in the prime cost of production and to fulfill the plans for profit and payments into the budget. Last year a considerable number of production associations and industrial enterprises of RSFSR jurisdiction failed to cope with the plan for sold output and supply commitments. There was an unhappy state of affairs when it came to meeting the labor productivity targets at many enterprises of the construction materials industry, local and meat and dairy industry and the fish industry. Enterprises of the ministries of textile, food and fuel industry failed to achieve the annual labor productivity growth rate. Unjustifiably big losses of work time and an increase in the amount of overtime work are being tolerated at certain of them, as before.

The timely assimilation of planned and an improvement in the use of operating production capacity represents major potential for an increase in

production efficiency and output. However, the level of assimilation of capacity is still inadequate at certain enterprises of the ministries of construction materials industry and light, food and local industry.

The production of goods in deviation from all-union state standards and technical specifications is frequently tolerated, and the practice of supplying the trading network with low-quality goods which are not in demand, which leads to the sales organizations' refusal of them, rejections and price reductions, unproductive expenditures and, in this connection, a reduction in profit, has not yet been eliminated.

There are big losses as a consequence of the failure to observe plan and contractual discipline. Thus in 9 months of last year alone enterprises of the "Rospromsherst'" paid over R18 million in fines, mainly for the nonfulfillment of contracts for product supplies, which was a deciding factor behind nonfulfillment of the profit plan by R40.7 million.

A systematic reduction in the prime cost of production represents big potential for an increase in profitability. There is also an increase in the role of a reduction in production costs at the current stage as an indicator of production efficiency which comprehensively reflects activity in the manufacture of products and the intelligent use of material, labor and financial resources. Nevertheless, there are still many enterprises which are failing to meet the target for a reduction in production costs. Overstated norms of the expenditure of raw material and natural loss and, at the same time, understated norms of manufacture of the finished product are in effect in the textile, food, fuel and meat and dairy industries and at a number of enterprises of other industrial sectors, which by no means mobilizes their collectives to adopt measure to economize on material resources.

The lagging that is being tolerated in meeting the targets and also failure to observe a regime of thrift in the use of material, fuel-energy, labor and financial resources are leading to nonfulfillment of the profit plan and the formation of a shortage of in-house working capital and, in turn, reducing budget revenue. Associations and enterprises of textile, food, light and fuel industry and the river fleet fell short of the profit target by particularly large sums last year, in which connection many of them failed to fulfill their budget obligations.

Together with scientific-technical progress a further improvement in the organization and norming of labor should be an important source of a growth in labor productivity. Attention is being paid to this in a number of industrial associations, more progressive production norms are being formulated, and new techniques and equipment and the automation and mechanization of production processes are being introduced.

At the same time it has to be mentioned that in industry of RSFSR jurisdiction approximately 24 percent of the enterprises failed to fulfill the labor productivity growth plan last year and had a production shortfall to the extent of more than R2.3 billion. Many of them are being slow to revise their production norms.

These shortcomings testify that exactingness displayed toward the managers of economic organizations for meeting the targets for such important economic indicators as labor productivity, a reduction in production costs, profit and payments into the budget has diminished.

The finance authorities are obliged to strive to insure that the higher organizations at all levels adopt effective measures to raise association and enterprise managers' responsibility for the unconditional fulfillment of the targets in the final year of the 10th Five-Year Plan and concentrate their attention on the intelligent, economical use of labor, raw material, fuel-energy and financial resources.

The solution of such a key problem as an increase in social production efficiency and work quality is directly linked with a further improvement in planning. Yet the corrupt practice of the unwarranted downward alteration of plans for enterprises has taken root in certain departments and production associations, affording the latter the opportunity of obtaining an undeserved bonus.

The finance authorities and all economic services are confronted with big tasks to implement the CPSU Central Committee decree "A Further Improvement in the Economic Mechanism and the Tasks of Party and State Organs" and the CPSU Central Committee and USSR Council of Ministers decree "An Improvement in Planning and an Intensification of the Impact of the Economic Mechanism on an Increase in Production Efficiency and Work Quality."

A further refinement of management methods is needed under the conditions of the large-scale economy of developed socialism and the scientific-technical revolution, and new demands are being made on the structure and technical level of production and for the more efficient use of operating and newly introduced production capacity and the economical and intelligent use of labor, financial and material resources. These are objective demands of the economic laws of socialism, primarily of the law of plan-based and proportional development.

Today the production growth rate is largely restricted by the inadequate level of efficiency of equipment and capital investments and high material consumption in production. The output-capital ratio is still low at many enterprises, poor use is made of equipment, and manpower losses are tolerated. Difficulties in balancing the plan are connected with these.

The solution of such major problems demands a constant reduction in the capital- and labor-intensiveness of production and an in-depth knowledge of the long term, within the confines of which it is alone possible to practically accomplish large-scale economic or scientific-technical maneuvers. That is why a further improvement in planning and the elaboration of an interconnected system of five-year plans and their conversion into a work plan and the principal form of the solution of long-term problems of socioeconomic development is a central issue in the CPSU Central Committee and USSR Council of Ministers decree.

The most important tasks of proportional balance, which should largely be achieved through economizing on resources and a reduction in losses, should be accomplished in the five-year plan. Unfortunately, losses in the economy are still considerable. Big losses are tolerated annually in agriculture alone from barrenness and murrain. Nonproductive outgoings from nonrealized losses in other sectors of the economy amount to hundreds of millions of rubles. Losses of work time are great. For this reason the achievement of balance through economizing on labor, financial and material resources and reducing losses is a paramount task of economic organizations and economic services at all levels.

It is essential in the next 2-3 years to complete the formation of production associations as the basic financially autonomous element of industry and implement measures for production specialization and cooperation and the centralization of ancillary subsidiary services and also the managerial functions of the amalgamated enterprises and the refinement of financially autonomous work methods in the associations and their gradual introduction in the activity of industrial and construction ministries.

Practice shows that where the approach to the solution of these problems is not a formal one but where the work is performed purposefully and comprehensively, real results are produced. There is an increase in the current-basis efficiency and quality of management of the sector, a reduction in management staff and expenditure thereon and an improvement in economic indicators. It is essential to draw the proper conclusion from this and insure unconditional observance of the spirit and letter of the decree.

An integral and inalienable part of planning economic and social development is financial planning. The decree envisages a well-balanced system of financial planning which embraces all levels of management and incorporates the compilation of five-year (with an annual distribution) and also annual financial plans, from the production associations (enterprises) through the ministries and departments, and also an overall financial balance. There is a considerable increase under these conditions of the role and responsibility of economic and financial services in all ministry and department management links for the fullest disclosure and computation in the plan of in-house potential, the growth of accumulations and for the provision of the measures envisaged in the draft economic and social development plans with the necessary financial resources.

As is known, profit is an important source of the formation of budget revenue and an indicator of the financially autonomous activity of the enterprises and associations. For the purpose of increasing the economic responsibility of associations and ministries for the results of financial-economic activity and augmenting their interest in the most efficient use of material and financial resources the industrial ministries will be set (as they become ready for this), as of the 11th Five-Year Plan, a stable norm of deductions from profit (differentiated by year) for their disposal on the basis of the targets approved in the five-year plan. This part of

the profit will be used to finance planned expenditure on the development of the sector and will insure guaranteed receipts of payments into the budget.

A new system of indicators will be introduced in industry at all levels of management in accordance with the decree. The indicators and economic norms are oriented toward the intensive path of development of the economy and qualitatively high final results. The stable nature of the annual and quarterly plans approved for the production associations, enterprises and organizations must be secured. It is essential to exclude from practice instances of their downward adjustment in accordance with the actual level of fulfillment. The regulations provide for the disciplinary and material liability of managers with whose authorization such adjustments were permitted and also the deprivation in full or in part of the bonuses of association, enterprise and organization managerial workers. The system of indicators should prompt the labor collectives to the comprehensive growth of labor productivity, the maximum use of fixed capital and a savings of material resources.

The adopted decrees open extensive opportunities for the further development and introduction of the principles of financial autonomy in the work of the brigades, enterprises, associations and ministries. To insure the timely and precise implementation of all provisions of the adopted decree it is essential to enhance the organization and coordination of the work of all elements of the economy and to strive for greater efficiency and drive in the activity of the staff of all management bodies. It is necessary to constantly strengthen state, production and labor discipline and raise the personnel's responsibility for the fulfillment of the plans and contractual obligations. All this will enable the finance authorities to make higher demands on the enterprises in elevating the level of planning and making the system of material stimulation directly dependent on the efficiency and quality of work and the fulfillment of quotas with the least expenditure.

Transportation is of great significance for the development of the country's production forces. The freight and passenger turnover of motor transport and the transportation of cargo and passengers by the river fleet are growing in the republic. However, the enterprises of the RSFSR Ministry of Motor Transport and Ministry of the River Fleet are satisfying the economy's and public's transportation requirements far from fully. Compared with last year there has been a deterioration in the technical condition of the trucks and a reduction in the number of runs they make, and neither is the shift-work operation of the motor vehicles growing. They are idle for a long time during loading and unloading. The Ministry of the River Fleet fulfilled the freight turnover plan, but particular concern is being aroused by the transportation lag in the regions of Siberia, the Far East and the Far North, where the river fleet is the main form of transportation for delivering bulk freight to the remote areas. This ministry's financial results are extremely unsatisfactory. In this connection the finance authorities must step up the attention they pay to the operation of the transportation enterprises and more strictly demand of the motor pool and steamship

company managers fulfillment of the transportation plan, an improvement in the use of rolling stock and unconditional observance of finance discipline and budget obligations.

As before, in the current year turnover tax will constitute a large proportion of budget revenue. Receipts thereon on republic territory are planned at R59.2 billion and deductions into the republic budget at R27.5 billion. The sum total of turnover tax will depend on the industrial enterprises' and associations' manufacture of consumer goods in the set volume and assortment. Overfulfillment of the consumer goods production and sale plans in a number of sectors made it possible last year to additionally channel into the state's revenue over R300 million of turnover tax and payments from profit.

Soviet trade has an important part to play in the accomplishment of economic and social tasks and also in securing a constant increase in budget revenue. The volume of commodity turnover is growing and the network of stores and catering establishments is expanding annually in the RSFSR. In 1979 retail commodity turnover grew 3.7 percent compared with 1978, but the state trade plan was underfulfilled. The plans were fulfilled unsatisfactorily in Arkhangel'skaya, Volgogradskaya, Omskaya, Permskaya and a number of other oblasts.

The trading organizations are still making insufficient use of the opportunities for improving trade. The quality of service frequently fails to correspond to the public's increased requirements. Serious shortcomings and omissions are tolerated in commercial and planning-economic work. Goods of outdated fashions frequently pile up in trade. Many consumer cooperative society organizations are displaying insufficient initiative in organizing work on involving local commodity resources in the commodity turnover and increasing the production of goods at cooperative enterprises and are failing to make full use of the possibilities of the procurement of wild fruit, berries, mushrooms and honey and purchases from the kolkhozes and the population's private subsidiary plots of agricultural product surpluses and of the expansion of the trade in these products, as required by the recently adopted CPSU Central Committee and USSR Council of Ministers decree "Further Development and Improvement of the Activity of the Consumer Cooperative Societies."

The finance authorities have a big role in realization of the commodity turnover plan. They must constantly monitor and strive through the soviet ispolkoms for a sharp improvement in the operation of the trading network, the complete preservation of the goods and more active influence on industry for an increase in the manufacture of consumer goods and an expansion of their assortment and the production of new products of improved quality and with Olympic symbols.

We must also remember, together with turnover tax and payments from profit, other income like, for example, forest revenue, which is set at an amount

of over R400 million, income tax from cooperative enterprises and public organizations (over R352 million), income tax from the kolkhozes (over R285.3 million) and others. It is also necessary to monitor the timeliness of the receipt of mandatory payments from the population and also resources from cash prize-merchandise lotteries and resources from the 3-percent State Loan.

This sector must constantly be under the strict supervision of the finance authorities, which must insure faultless tax accounting in the cities and settlements and the granting of the population fixed exemptions strictly in accordance with the law.

The finance authorities must not lose sight of the need for an analysis of monetary circulation on the basis of the balance of the population's monetary income and expenditure and the USSR Gosbank's cash plan. Constant attention must be paid to monitoring expenditure of the wage fund and to the correctness of the correlation of the growth rate of labor productivity and wages.

Fulfillment of the revenue plan will depend on how the managers of production, industrial and cooperative enterprises and organizations insure an efficient search for reserves and the effectiveness of the finance authorities' monitoring of the use of material and financial resources.

Big tasks confront the finance authorities in insuring the efficient and high-quality fulfillment of the expenditure part of the budget. In the state budget for 1980 expenditure has been determined with regard for an intensification of the regime of economizing on material, labor and financial resources and their concentration for the solution of key economic problems in the final year of the 10th Five-Year Plan. Almost R61 billion will be channeled from the budget, the individual resources of enterprises and economic organizations and bank credit into the development of the economy. Considerable attention has been paid to the further development of industry and the strengthening of the material-technical base of the construction organizations. Some R15 billion will be channeled to this end from all sources.

Some R9.4 billion are envisaged for the development of light, textile, meat and dairy, food, fish and local industry, which should insure an increase in the production of consumer goods to satisfy the population's growing demand. The finance authorities must constantly monitor the efficiency and good sense of the use of the allocated resources, the timeliness of the commissioning of fixed capital, an increase in the manufacture of consumer goods and an improvement in their quality and assortment entirely in accordance with the requirements of the party Central Committee's November (1979) Plenum and the CPSU Central Committee and USSR Council of Ministers decree "An Improvement in Planning and an Intensification of the Impact of the Economic Mechanism on an Increase in Production Efficiency and Work Quality."

Some R21.3 billion will be allocated from the budget and individual resources for the implementation of the comprehensive program of agricultural development in accordance with the decisions of the 25th party congress and the CPSU Central Committee July (1978) Plenum. Some R9.4 billion or an increase of 8 percent over last year will be spent on implementing the plan for the further development of the agriculture of the RSFSR's nonchernozem zone. Expenditure on the development of the sovkhozes and other enterprises and organizations of the RSFSR Ministry of Agriculture has been set at R16.1 billion, and, furthermore, credit will be extended through loans for outlays of R1.8 billion. The budget provides for allocations to low-profitability and loss-making sovkhozes for the payment of insurance payments of the order of R703.6 million and for paying off bank credit of the order of R825 million.

Implementation of the program of the upsurge of agriculture will largely depend on successful land improvement. It is planned to spend R4.3 billion, R2.2 billion of which from the union budget, on land improvement and the reinforcement and expansion of the production base of water resources organizations. However, in many instances these resources are being used inefficiently, the norms of the duration of the construction of water resource facilities are not being observed, the plans for the commissioning of irrigable and drained land are not being fulfilled, and the amount of unfinished construction work is growing.

Despite the positive results that have been achieved in agriculture, the sector's economic indicators and the growth rate of the production of the most important products still fail to correspond to the set tasks for the fuller satisfaction of the growing need of the population for food products and of industry for raw materials and are not commensurate with available potential. Unswerving fulfillment of the decisions of the party and government and the instructions of Comrade L. I. Brezhnev to the effect that it is essential to concentrate the main attention on a comprehensive increase in the production of agricultural products, an increase in production efficiency and work quality, a growth of labor productivity, an improvement in the use of fixed production capital and material and labor resources and a strict regime of thrift is required of the agricultural authorities, kolkhoz and sovkhoz leaders, and specialists and scientists.

These instructions of Comrade L. I. Brezhnev and the decisions of the CPSU Central Committee July (1978) Plenum must be made the basis of the plan of economic and control work of all finance authorities. It is essential to exercise constant, effective control of the agricultural authorities and to strive for an increase in the efficiency of the use of allocated resources, an increase in production, a reduction in production costs, an improvement in planning and a strengthening on this basis of the economy of the kolkhozes and sovkhozes and the fulfillment of production and financial indicators.

In accordance with the decisions of the CPSU Central Committee July (1978) Plenum, there is increased significance in state insurance in compensating agriculture for losses from natural disasters. Insurance of sovkhoz property has been introduced together with the insurance of kolkhoz property. In compensation for the damage caused by natural disasters last year the kolkhozes and sovkhozes were paid R2.66 billion, including R1,243,000,000 to the sovkhozes. It is essential that the State Insurance Main Administration authorities efficiently organize the work on determining the extent of the damage and timely compensation for the losses.

The number of persons making use of the services of the State Insurance Main Administration is increasing with every succeeding year. The number of voluntary insurance contracts rose to 88 million in 1979, and the payment of insurance sums and compensation to the population was in excess of \$3.4 billion. This makes it incumbent on the finance authorities to render the insurance authorities greater assistance in the further development of insurance, an improvement in service of the population and the establishment of strict control over the security of assets.

The development of housing and municipal services and consumer services is an important part of the program of an increase in the Soviet people's well-being which was adopted by the 25th CPSU Congress. This year R6.5 billion will be spent on the development and maintenance of the republic's housing and municipal services, and, of these, approximately R1 billion will be spent on the provision of the cities, worker settlements and rayon and rural centers with amenities. Furthermore, it is planned to spend R915.4 million from the farms' resources on major repairs to the housing of the ministries and departments.

Consumer services in the republic are developing rapidly. Currently almost all oblast centers and major cities have modern personal service centers and specialized enterprises with a ramified network of interrayon branches, shops and comprehensive reception centers on the sovkhozes and kolkhozes. At the same time far from full use is being made of the opportunities for expanding the types of services. The quality of the services and the standard of service of the public are in need of further improvement. It is essential that the appreciable shortcomings in this system be eliminated and that increased attention be paid to reducing expenditure on production, eliminating losses from inefficient management and lowering administrative-managerial expenditure. It is necessary to strive for the more efficient use of the resources allocated by the state for the development of housing and municipal and consumer services.

An important place in the work of the finance authorities should be occupied by the supervision of capital construction--a major industrial sector of the economy largely determining the accomplishment of the tasks put forward by the 25th party congress in the sphere of economic and social development. Construction in the regions of the RSFSR's nonchernozem zone and on the Baykal-Amur Main Railroad is underway on a large scale, and many important national economic complexes are being installed in the regions of Siberia

and the Far East and other regions of the republic. More than 240 million square meters of overall housing area were commissioned and general educational schools for almost 2.5 million students, children's preschool establishments for 1,203,000 children and hospitals with 134,000 beds were built from all sources on RSFSR territory in the 4 years of the current five-year plan.

However, as Comrade L. I. Brezhnev stressed in his speech at the CPSU Central Committee November (1979) Plenum, the situation in capital construction cannot satisfy us. The process of dispersing capital investments around numerous construction projects has not been halted, the amount of incomplete construction is growing and a large amount of uninstalled equipment has built up, which is leading to the freezing of appreciable material and financial resources.

Proceeding from the decisions of the 25th party congress and the provisions of the USSR Constitution, the CPSU Central Committee and the USSR Council of Ministers are implementing a complex of measures for a further improvement in plan-based management of the economy and, in particular, capital construction. Stable five-year plans of capital construction with an annual quota distribution and balanced in respect of the availability of materials and production and power-engineering equipment and labor and financial resources and also in respect of the capacities of the construction and installation organizations will be established as of the 11th Five-Year Plan.

Measures are envisaged for increasing the responsibility of the clients and contractors for the timely commissioning of capacities and projects. The introduction of settlements between clients and contractors for construction which has been fully completed and commissioned and also stages and facilities made ready to manufacture products and render services will be completed in 1981. An important role will be assigned the more extensive use of long-term credit in place of budget financing in removing shortcomings in capital construction.

It is essential to adopt all measures to remove the shortcomings in the organization of construction and strive in this current year for a strengthening of plan and production discipline and an increase in the responsibility of construction organization managers for the fulfillment of all quotas. This primarily applies to the construction organizations of the RSFSR Ministry of Rural Construction and the RSFSR Ministry of Housing and Civil Construction, which, as a consequence of serious shortcomings in the organization of construction and industrial production, are failing to fulfill the plans in the majority of economic indicators.

A big program of capital construction is planned for 1980. Some R12.9 billion are being allocated from the budget for this purpose. It is essential that establishments of the republic (RSFSR) offices of the Gosbank and Stroybank and also the finance authorities step up supervision of the specified use of the resources allocated for capital construction and the construction sites' and contracting organizations' observance of plan and financial discipline.

Some R1.6 billion from all sources has been channeled into financing an increase in the norm of in-house working capital. As a whole, the norm of in-house working capital on 1 January 1980 will amount of R35.6 billion, which will insure a production growth in the sectors of the economy.

Attaching importance to an improvement in the use of working capital, the RSFSR Council of Ministers, upon examining the draft state budget, provided in 1980 for the release from turnover of R2.5 million and observed that many of the republic's ministries and departments are failing to meet the targets determined for the five-year plan for involving commodity and material stocks in economic turnover and that above-norm stocks for which credit has not been extended by the bank are growing. Appreciable material stocks are being diverted from turnover and the financial position of the associations and enterprises is being aggravated as a result. The national economy is failing to receive many necessary products, and the budget large sums in revenue. The republic government has demanded that the ministries and departments thoroughly investigate the reasons for the subdepartmental enterprises' nonfulfillment of the quotas for involving commodity and material stocks in economic turnover and bring state order to bear here. It is essential that the finance authorities exercise strict supervision of the fulfillment of the quotas and the preservation of in-house working capital.

Work on utilizing budget allocations for implementing social-cultural measures occupies a particular place in the finance authorities' activity. A number of major measures has been implemented in the republic in the current five-year plan in fulfillment of the social program adopted by the 25th party congress. Public education, science and culture have been further developed, and there has been an improvement in medical assistance to the population.

In the 4 years of the 10th Five-Year Plan state budget expenditure on the upkeep of social-cultural establishments and on social-cultural measures amounted to more than R125 billion. The plan and budget envisage a further growth in the network of social-cultural establishments and a corresponding increase in budget allocations. The volume of expenditure is set at R34.4 billion--an increase of 3.7 percent over the current year's plan.

The further perfection of tuition and an improvement in the labor and patriotic upbringing of the younger generation is being accomplished via the extensive network of general educational schools and preschool and other public education establishments. Some R6.7 billion or 3.2 percent more than the 1979 plan is being allocated for their upkeep.

Accomplishment of the tasks of an acceleration of scientific-technical progress and the growth of the Soviet people's cultural and spiritual resources demands the planned training of personnel. The budget envisages allocations of R3.4 billion for this purpose.

A new manifestation of the concern for tomorrow's personnel who can accomplish the increasingly complex tasks of communist building is the CPSU Central Committee and USSR Council of Ministers decree "Further Development of the Higher School and an Increase in the Quality of the Training of Specialists," which was adopted last year. Measures are being adopted in the republic to reinforce the higher and secondary specialized academic institutions with scientific and teaching personnel and to improve their physical plant and also to retain and make the correct use of the specialists. Some R2.1 billion--an increase of 4.1 percent--will be allocated from the budget for the upkeep of these establishments.

The system of vocational-technical tuition is of great significance for the training of skilled workers. More than 4,500 vocational-technical schools with an enrollment of 2 million people, for whose upkeep R1.3 billion will be allocated, will operate in the RSFSR.

Science is called on to play an active part in the development of the economy and culture and in an increase in production efficiency and the population's living standard. Some R753.9 million will be spent on the further development of science. However, not all the republic's scientific establishments are working with the proper efficiency, and there is big untapped potential here.

In the RSFSR cultural-educational work is performed via an extensive network of clubs and houses of culture, libraries, museums, state and people's theaters and musical collectives. Allocations for their upkeep will amount to R733.5 million from the budget alone.

The Communist Party and the Soviet Government display constant concern to improve medical services for the population. The state budget will allocate R7.8 billion for the upkeep and further development of general health and other medical establishments and an improvement in work on caring for the health of and rendering skilled medical assistance to the population, and the allocations for the health care of mother and child will be considerable.

The RSFSR state budget provides for allocations for the payment of pensions, allowances and other forms of social security in the amount of R14 billion--an increase of 5.7 percent over the current year. In addition, R1.9 billion will be allocated for the payment of pensions and allowances to kolkhoz members from kolkhoz member's centralized union social security fund. The improvement as of 1 January 1980 in the pensions of kolkhoz members and invalids since childhood were taken into consideration when expenditure was being determined.

The finance authorities must institute strict supervision of the development of the network of public education and personnel training and the timeliness of the introduction of schools, kindergarten and creches and general health and other medical establishments under construction. It is essential here to insure the economical and more efficient expenditure

of the huge resources spent on social-cultural measures and to demand of the leaders of the corresponding establishments strict observance of financial and staff-estimate discipline.

Work has been carried out in the republic on improving economic management and reorganizing the management of sectors of the economy on the basis of the decisions of the 25th party congress. Master plans of the management of the food industry, fish industry, the geological survey and mineral prospecting sector, road building and maintenance and the construction materials industry of Moscow and the structure of the service of the operation of land-improvement systems were approved in the period 1976-1979. The measures which were implemented made possible a savings from the reduction in management costs of R879 in the 4 years of the five-year plan. There has been an increase in the level of production specialization and cooperation and a reduction in the number of tiers of management and independent enterprises. However, not all ministries and departments are working sufficiently actively and purposefully on improving the management of sectors of the economy and cutting management costs. The reserves and possibilities here are still very great, and fuller use must be made of them. The path toward this is opened by the complex of measures envisaged in the CPSU Central Committee and USSR Council of Ministers decree "An Improvement in Planning and an Intensification of the Impact of the Economic Mechanism on an Increase in Production Efficiency and Work Quality."

In 1980 it is planned to obtain a savings of R238.8 million from a reduction in management costs. This makes it incumbent on the finance authorities to constantly monitor work on improving and reducing the costs of the management apparatus, bearing in mind that there has even been an increase in recent years in the proportion of the management apparatus in the overall number of those employed in the system of the Ministry of Consumer Services, Ministry of Housing and Municipal Services, Ministry of Motor Transport and Ministry of Land Reclamation and Water Economy. It is essential to strive for strict observance of the regime of thrift in the expenditure of resources, increased responsibility for the observance of state discipline and an increase in the efficiency of all managerial activity and a further structural improvement.

A big role is assigned accounting and control in the fulfillment of the tasks of an upsurge in social production efficiency, the safekeeping of socialist property and observance of the regime of thrift in the expenditure of material, labor and financial resources. Work has been carried out recently to improve the status of accounting and to step up control in the economic organizations and budget establishments, and progressive forms and methods of bookkeeping, centralization and the mechanization of accounting transactions have come to be introduced more extensively. However, the material of the audits and checks attests serious shortcomings in the organization of accounting and the state of departmental control and instances of remiss management and violations of financial discipline. It is essential to get the departments to adopt additional measures to reinforce the checking-auditing apparatus, enhance the efficacy of prior and

current control, improve the quality of the audits and the organization and arrangement of bookkeeping and reporting and insure the safekeeping of socialist property.

For the more successful accomplishment of the tasks facing the finance authorities it is essential to act in close contact with the planning bodies, the people's control authorities and the credit establishments. The finance authorities should rely constantly in their practical activity on the assistance of the local soviets, which, making broad use of the powers granted them by the new constitution, are performing a considerable amount of work, exerting a big influence on all spheres of the economy and culture and deciding questions of economic and cultural building on a current basis.

In accordance with the decisions of the 25th CPSU Congress, the party and government are pursuing a policy of the more current solution of a broad range of questions of economic building and also of an increase in the responsibility of the corresponding tiers of management, which is designed to promote increased production efficiency and work quality.

The successful fulfillment of the tasks set at the CPSU Central Committee November (1979) Plenum in the speech by Comrade Leonid Il'ich Brezhnev, the general secretary of our party, will depend on the finance authority leaders' constant attention to work with the personnel. Education of the masses and the economy are the two most important spheres of the struggle for communism. It is essential, as the CPSU Central Committee decree "A Further Improvement in Ideological and Political Education Work" demands, to labor purposefully on improving ideological and political education work and to elevate it to a higher-quality level conforming to the requirements of developed socialism and the new tasks of communist building.

There is no doubt that, having joined in the nationwide patriotic movement for a worthy greeting of the 110th anniversary of Vladimir Il'ich Lenin's birth and the upcoming 26th party congress, the RSFSR's finance workers will mark 1980 with new successes in supporting the 10th Five-Year Plan targets with monetary resources.

COPYRIGHT: "Finansy SSSR", 1980

8850

CSO: 1820

## INVESTMENT, PRICES, BUDGET AND FINANCE

### KAZAKH OFFICIAL PROPOSES WAYS TO INCREASE BUDGET REVENUES

Moscow FINANSY SSSR in Russian No 2, Feb 80 pp 45-48

[Article by Ye. Zh. Derbisov, chief of the Kazakh SSP Ministry of Finance State Revenue Administration: "Multiplying Budget Revenue"]

[Text] On the basis of an in-depth study of the economics and finances of sectors of the national economy, the further development of socialist competition and an improvement in economic and control work, those working on the republic's state revenues are striving for the maximum disclosure and mobilization of in-house potential and an increase in budget revenue. The plan of state revenues for 1978 was fulfilled 103.8 percent. Some R266.3 million, including R93.3 million of turnover tax and R122.7 million of payments from profit, were channeled into the state budget, including union budget receipts, in excess of the plan.

Fulfillment of budget revenue was secured in all oblasts and Alma-Ata. There was an improvement in work on collecting state revenues and taxes from the population. For the first time the republic had no arrears on 1 January 1979. The successful activity of various sectors of the republic's industry and also systematic monitoring of the fulfillment of plans for the production and sale of products in the established volume and assortment, commodity turnover and of the dispatch of goods to the customer largely contributed to this.

A principal sector of the economic work of the finance authorities is finding reserves of the additional production of goods in demand and obtaining additional revenue on this basis. The finance workers did much in this direction in 1978. Disclosing potential, they galvanized the activity of enterprise economic services in increasing the production of consumer goods. Targets of increasing the manufacture and expanding the assortment of goods by more than R107 million were determined following the proposals of the finance authorities, which increased budget resources by R22 million.

At the same time we still have shortcomings. Proper supervision of the fulfillment of production and sale plans, the amount of centralized commodity

allocations received, distribution of commodities in the trading network and of the work of stores and wholesale-selling organizations is not exercised everywhere. Despite overfulfillment of the turnover tax plan in the republic, certain enterprises of food, light and local industry failed to cope with the production plans and certain trading organizations and nonmarket consumers failed to fully assimilate commodity stocks, for which reason the budget failed to receive more than R15 million. The turnover tax plan was fulfilled particularly unsatisfactorily in the majority of oblasts in enterprises of the Ministry of Procurement, brewing, tobacco, sugar and local industry and the Ministry of Power and Electrification. For example, because of a failure to secure the plan for beer production by 1.7 dacaliters by 12 brewery plants and 2 associations the budget failed to receive more than R4 million.

Turnover tax in the republic's budget revenue in 1979 is planned at R3,761,000,000, which is 5.1 percent more than in the previous year. To secure its fully and timely receipt it is essential to constantly monitor fulfillment of the plans for the production and sale of products, delivery of the goods and supplies of pledged merchandise and to adopt current measures to remove the factors exerting a negative influence on the revenue plan.

To make more precise the turnover tax rates in effect last year the finance authorities examined material on the profitability level of the production of consumer goods, which made it possible to newly determine and specify 226 turnover tax rates at enterprises under republic jurisdiction. As a result in 1979 payment receipts will have increased by R1,093,600. Some 116 turnover tax rates were newly determined and raised for enterprises of local jurisdiction. This yielded R1,689,300 of additional takings. Furthermore, 267 reductions in the turnover tax rates were approved for low-profitability and loss-making commodities, including 150 for commodities manufactured by enterprises under republic jurisdiction.

Effective rates were improved in the process of specification of the turnover tax rates for 1979. There was a reduction in the number of individual rates whose amounts differed by 1-2 units. This was accomplished by grouping commodities in accordance with profitability level. For example, 13 rates were indexed in the book of turnover tax rates for the Kazakh SSR at the Alma-Ata "Suvenir" Factory, but as of 1 January 1979 their number will have been reduced to six. Group turnover tax rates were formulated in the "Zhalyn" Publishing House instead of a number of individual rates for pictorial products.

A special check was conducted in 1978 of the production of new highly profitable commodities. On the basis of its results oblast finance departments and the Alma-Ata City Finance Department established 16 turnover tax rates. The same year the ministry checked out the determination of turnover tax rates and reductions there in in the finance authorities of Alma-Atinskaya, Gur'yevskaya, Vostochno-Kazakhstanskaya, Chimkentskaya and Aktyubinskaya oblasts. The finance authorities of two oblasts--Turgayskaya and Chimkentskaya--were rendered practical assistance in conducting documentary checks of turnover tax returns. The book of turnover tax rates for

commodities produced by enterprises under republic jurisdiction was revised with regard for the changes and amplifications to alleviate the work of the finance authorities.

As the checks showed, there are shortcomings in the finance authorities' work with respect to turnover tax. The main shortcoming is the unsatisfactory quality in a number of cases of the checking of the turnover tax returns. Following audits and checks conducted by the republic Ministry of Finance in 1978, R124,500 were added to the budget. Shortcomings in the computation of turnover tax are systematically brought to the attention of the finance authorities in surveys.

The finance authorities are performing a great deal of work on settlements with the budget in connection with the change in retail prices of goods and supplementary allowances for cloth. Following a check of revaluation material submitted by trading organizations and enterprises, the finance authorities compensated them in 1978 from the budget with the amount of a price reduction of the order of R29.9 million and also secured budget receipts of R22.7 million of the additional valuation. In the said period the garment and furniture enterprises were paid R63.7 million of supplementary cloth allowance.

Payments and indemnification of resources from the budget are under the constant attention of the administration's finance workers. In 1978 the state of work in this field was checked out in the finance authorities of Pavlodarskaya, Turgayskaya, Gur'yevskaya, Vostochno-Kazakhstanskaya, Kokchetavskaya, Semipalatinskaya and Taldy-Kurganskaya oblasts. Letters were sent to the chiefs of the oblast finance departments which were checked obliging them to intensify supervision of the correctness of the payment of resources from the budget. The republic Ministry of Trade and the Kazakh SSR Potrebsoyuz were informed of proven violations of the procedure of revaluation and the official registration of the material and requested to adopt measures to remove them and prevent them occurring in the future. Moreover, the republic finance authorities were sent a survey letter on 1 March 1978 on shortcomings in indemnification from budget resources disclosed as a result of a revaluation of commodities.

The State Revenue Administration and the finance authorities regularly monitored the operation of entertainment enterprises: the plan for income tax from the showing of motion pictures was examined quarterly in the ministry board, and the local finance authorities reported to the local soviet ispolkoms on the progress of its fulfillment. As a result there was a considerable overfulfillment of the plan for income tax from the showing of motion pictures in 1978--106.1 percent.

The most important tasks of the collectives of the finance authorities, particularly those working in the field of state revenue, are systematic monitoring of the financial-economic activity of enterprises (associations), thorough study of their economies, effective influence on their fulfillment of production and financial indicators and the timely and full receipt of revenue and also an increase therein thanks to uncovered production

potential and output sales. To this end the republic finance authorities analyzed the accountancy and statements of 1,562 enterprises and economic organizations in 1977 and of 1,925 in 1978. The results of the analysis were conveyed to the corresponding soviet ispolkoms and reported to the higher organizations.

Over the year the finance authority workers will conduct more than 6,787 accounts checks of economic bodies' accounts and balances. A number of serious shortcomings is being revealed here in the compilation of statements of account and calculations of payments into the budget whose elimination will make it possible to add to the budget annually more than R37 million of payments from profit, over R800,000 of income tax from cooperative and public organizations and also a considerable sum of other types of revenue.

For 3 years now the Kazakh SSR Ministry of Finance, in conjunction with the republic committee of the State Establishment Workers Union, has been conducting the reviews "Best Analysis of Financial-Economic Activity" and "Best Accounts Check of a Statement of Account and Balance Sheet" for the purpose of studying and disseminating the best methods of performing control and economic work and also further developing the creative initiative and activeness of the finance workers. The winners are awarded a testimonial of the republic Ministry of Finance and the Kazakh republic committee of the State Establishment Workers Union and they are given cash prizes.

The finance authority workers keep an attentive eye on fulfillment of the state revenue plan and a strengthening of the financial discipline of the enterprises and organizations. Checking the timeliness of the economic bodies' settlements with the budget, they regularly inform the oblast finance departments, and the latter inform the republic Ministry of Finance, about the enterprises and organizations which could find themselves in arrears. In accordance with this material, the Kazakh SSR Ministry of Finance and the oblast finance departments, in conjunction with the corresponding ministries, departments and bank establishments, adopt measures to prevent their formation and render assistance in insuring timely settlements. This has had a positive effect on payment discipline. In 1978 behind-schedule receipts of the republic economic bodies' payments from profit amounted to 16.1 percent or fell 3.1 points compared with 1977.

Practice shows that where payment discipline is under the constant supervision of the finance workers and where purposeful measures are implemented to strengthen it, there are no arrears by the accounting dates or they are of negligible amounts. Thus thanks to daily work with the payer-enterprises and the corresponding departments, the finance authorities of Chimkentskaya and Tselinogradskaya oblasts prevented a single instance of arrears in payments from profit throughout 1978. Quite good results were also achieved by the finance authorities of Kokchetavskaya, Taldy-Kurganskaya, Vostochno-Kazakhstanskaya and other oblasts. The finance workers' skillfully

organized supervision of the economic bodies' payment discipline enabled the republic to reach 1 January 1979 without arrears for the first time. This year we will adopt measures to consolidate the successes that have been achieved.

The completeness of the registration of the payers and taxation subjects and the correctness of the computation of tax payments and the timeliness of the granting to the citizens the exemptions to which they are entitled and also examination of their letters, statements and complaints on questions of tax collection are under the unremitting attention of the Kazakh SSR Ministry of Finance Board. For example, such questions as the implementation of preparatory measures for the tax accounting of urban state and local taxes and imposts, agricultural tax and the calculation of taxes from the urban population were subjects of discussion in 1978. The state of the finance authorities' supervision of the correctness of the computation and collection of taxes from the wages of workers and employees was also examined, and the question of a further improvement in the examination of the citizens' letters, statements and complaints was discussed repeatedly. Concrete decisions aimed at removing the shortcomings which had been revealed were adopted on all these questions.

The finance authorities are caused much work by the changes in the valuation of buildings and land plot areas occurring throughout the year in connection with annexes, rebuilding, demolition of part of the buildings and so forth. According to current legislation, these changes have to be taken into account, the payments recalculated, and a new notice has to be written out for the payer in place of the one he was presented with earlier. Yet practice has shown that the amounts of the additions and reduction concerning the tax from buildings and ground rent virtually correspond to one another in such cases and that ultimately the amount does not change. This procedure gives rise to the payers' censure at times. In our opinion, the time has come to disregard these changes in the valuation of buildings and land area and to use to calculate the payments the data of the technical inventory office as they stand on 1 January of the corresponding year.

The republic's finance authorities have implemented measures for a further intensification of control over the calculation of income tax from the profit of cooperative enterprises and the economic bodies of public organizations, income tax from the kolkhozes, forest income and other state revenue. The plan for receipts from these revenues were fulfilled in the republic in 1978. At the same time we have many financial authorities where planned revenue from the said sources is not being received. Thus last year 35 percent of finance authorities failed to cope with fulfillment of the plan for receipts of income tax from enterprises of cooperative and public organizations, and the tax losses amounted to R1.5 million.

Certain finance authorities are failing to pay due attention to this important area of work: they are exerting insufficient influence and, at times, no influence at all on an improvement in the activity of cooperative and

public organizations, are not always and everyhwere making an economic analysis of work and are not striving for fulfillment of the payment plans. This work is organized unsatisfactorily in the Tel'manskiy Rayon Finance Department of Karagandinskaya Oblast, the Sarysuskiy Rayon Finance Department of Dzhambulskaya Oblast and the Kurgal'dzhinskiy Rayon Finance Department of Tselinogradskaya Oblast.

The problem of conducting checks of the returns and statements of all the republic's cooperative and public enterprises has been solved, in the main. Checks were conducted at 1,657 of the republic's enterprises and organizations in 1978. As a result profit was increased by R1,724,000, and payments into the budget by R603,000. Unfortunately, in a number of cases the quality of the accounts checks fails to correspond to established requirements: questions subject to examination are covered insufficiently fully, and the correctness of the calcuialtion of the material incentive fund in the consumer cooperative society organizations and also calculations of the amounts of distribution costs and discounts (extra charges) on commodity remnants is not always monitored.

In 1978 finance workers checked out the correctness of the application of the fixed rates of payment by the stump for timber offered uncut and also of the calculation of the amounts of the penalties and damage caused forestry by var'ous infringements. The checks established that many forestry stations and their consumer goods shops are failing to recalculate payment by the stump in accordance with the quantity of timber actually procured, are violating the rules of the allocation of uncut wood in the USSR's forests and are failing to claim penalties from other timber cutters for failing to observe these rules. Following the checks, penalties were calculated and approximately R90,000 of payment by the stump were additionally computed. The shortcomings that were uncovered were reported to the Kazakh SSR Ministry of Forestry, which examined this material in the ministry board.

The finance authorities' work on computing and raising for the budget forest revenue is in need of further improvement. The finance authorities of Karagandinskaya, Kzyl-Ordinskaya, Kokchetavskaya and Ural'skaya oblasts failed to fulfill the plan for receipts of this revenue in 1978 (by R245,000). A big dereliction of the finance authorities is that they are failing to monitor on a current basis the completeness and timeliness of the distribution of the forest areas to be felled and to insure that 100 percent of forestry stations and forestry sections are covered by the checks. And the checks which are conducted are sometimes of a superficial nature, for which reason the shortcomings in computing the amounts of forest revenue are not being revealed in full and infringements of the rules of the allocation of uncut wood are being permitted.

The republic Ministry of Finance and the finance authorities attach great significance to the timeliness of the receipt of kolkhoz income tax calculations and their high-quality verification by the finance authorities. The rayon finance departments held instruction conferences with accountants and

other accounts workers of the kolkhozes at which instruction material and the procedure of drawing up income tax calculations was studied. Ministry of Finance and oblast finance department workers rendered the finance authorities practical assistance in the checking of these calculations. The republic has 418 kolkhozes. The documentary check of their annual income tax calculations for 1978 was completed by 1 June 1979. In the course of these measures many finance authorities made the necessary changes to the kolkhoz calculations, as a result of which there was an additional calculation of \$506,000 and a reduction of R104,000 of income tax.

At the same time certain finance authorities failed to fully uncover errors and infringements in the kolkhoz accounting and in the determination of taxable income and the sums of payments into the budget when conducting their documentary checks of the calculations. Repeat checks carried out by the republic Ministry of Finance workers in 1978 and in the first half of 1979 for 17 kolkhozes made it possible to add on R82,800 and reduce R2,400 of income tax. The oblast (rayon) finance departments reported the shortcomings and infringements in the compilation of annual income tax returns and calculations to the appropriate agricultural bodies and, where necessary, to the local soviets, and the republic Ministry of Finance reported these to the Kazakh SSR Ministry of Agriculture.

The auditing apparatus is assigned a big role in organizing work on state revenue. The list of staff members provides for 62 senior state revenue auditors in the republic on 1 January 1979. In accordance with the plan of economic and control work, the Auditing Department of the State Revenue Administration annually audits the finance authorities of 10 oblasts. Some 43 finance authorities were audited and 828 enterprises and organizations checked in 1978. Some R1,381,000 were added to the budget, including R55,000 from turnover tax and R707,000 of payments from profit, in the process of these checks. To improve the quality of the audits performed by workers of the oblast finance departments certain material is examined in the ministry State Revenue Administration, and this material is sent back to be rewritten. As far as the material of the audits performed by workers of the auditing apparatus is concerned, it is chiefly discussed at a production conference of the administration, and the corresponding observations and suggestions concerning the auditors are made appropos this material.

The big and complex tasks confronting the state revenue workers insistently demand that the apparatus be reinforced with skilled specialists. Every year many young people of higher and secondary academic institutions join the finance system who have theoretical training, but who are insufficiently conversant with the multifaceted and difficult work of securing fulfillment of the plan for receipts of state revenue and the organization of economic and control work at enterprises, in organizations and among the population. For this reason their practical tuition is of exceptional importance. This task is being accomplished by regular technical training classes at all levels, in group seminars and also at improvement courses.

Some 318 state revenue workers improved their qualifications in 1978: 149 in the Tselinograd Finance Tekhnikum, 149 in the Kazakh SSR Ministry of Finance, 16 at central finance courses in Leningrad and 4 in Moscow; 285 workers improved their qualifications in the first half of 1979: 140 in the Tselinograd Tekhnikum, 141 in the republic Ministry of Finance and 4 central apparatus finance workers in Moscow. Furthermore, in 1978 the State Revenue Administration workers conducted group seminar-conferences with collectives of the finance authorities of Karagandinskaya, Semipalatinskaya, and Severo-Kazakhstanskaya oblasts. Some 168 people participated. The same year seminar-conferences were held in Chimkentskaya, Aktyubinskaya and Tselinogradskaya oblasts, in which 200 finance workers participated.

Our successes are of importance for a worthy completion of the five-year plan and are creating the conditions for a further growth of the country's economic potential and a rise in the people's material well-being and cultural living standard.

COPYRIGHT: "Finansy SSSR", 1980

8850

CSO: 1820

## ECONOMIC MODELING AND COMPUTER TECHNOLOGY APPLICATION

### GOSPLAN ASPR FIRST LINE IN PLACE, OPERATING

Moscow EKONOMIKA I MATEMATICHESKIYE METODY in Russian No 1, Jan-Feb 80 pp 12-24

[Article by V. B. Bezrukov and Ya. M. Urinson: "Developing an Automated Plan Computation System"]

[Text] Actualization of the basic directions of improving planned management of the economy is associated with expansion of the range of problems being solved when developing state plans, with an increase in work load and computation. Under these conditions, prompt, high-quality preparation of plans cannot be ensured on the basis of the technology and methods of planning which have evolved, on its technical base. One primary way of further developing them is the development of automated systems enabling us, through the use of economic-mathematical methods and computer equipment, to improve planning and management quality with practically no increase in the size of the apparatus of planning organs, ministries and departments.

The requisites necessary to taking this path evolved in the 1960's in our country, thanks to rapid progress in electronic computer equipment and methods of economic-mathematical simulation. A large number of economic-mathematical models have been developed and experimentally checked which has, given the growing demand for effective methods of optimizing, substantiating and making planning decisions, made it possible to use them extensively in planning work. Several successful attempts to use mathematical methods and computer equipment to set up initial reporting and planning interbranch balances, solve individual tasks of optimizing production development and distribution, and others, have confirmed this possibility.

These initial successes also had a negative aspect, however. They generated faith in the speed and ease with which the potential for the large-scale application of models in planning could be transformed into reality. At the same time, it is a very long way from a laboratory experiment to industrial technology, from a prototype to series production, and in covering this distance we must both transform the variant checked experimentally and overcome the so-called psychological barrier, develop both organizational and economic requisites to the extensive use of this innovation. It is therefore for good reason that attempts to determine the circulation even of simulation

models which have recommended themselves well experimentally but are not reinforced by a complex of preparatory work have not brought the desired results.

Experience has shown that in order to improve planning based on modern methods and means of processing information, we need both the appropriate transformation of that information and a restructuring of the scientific-technical and information base of planning, of its technology and organization. Obviously, the content, sequence and forms of such restructuring need thorough theoretical substantiation and well-thought out organizational and technical measures and measures associated with the training, retraining and skill-improvement of planning workers. In accord with the requirement of a systems approach, all these measures must have a precise final aim, must be interlinked and echeloned in time, must be backed up by appropriate resources and must be implemented according to an overall plan under the leadership and control of a single center. The concrete form in which such an approach has been actualized is the design and introduction of USSR Gosplan and union republic gosplan automated systems of planning computations (ASPR) (1).

The ASPR was developed in accord with the technical assignment adopted by the USSR Gosplan in 1972 (2) of designing and introducing this system. About 140 scientific-research institutes, planning organizations and computer centers of the USSR and union republic gosplans, ministries and departments and the USSR Academy of Sciences participated in its development. The system's orderer was the USSR Gosplan and its lead developer was the USSR Gosplan's Main Computer Center (3). As of now, the first ASPR line has been accepted for operation and an assignment has been approved for designing and introducing the second line. Below, we provide a description of the system's first line and the directions in which it will be developed as the second line is developed.

The ASPR first line is that portion of the system in operation which includes the aggregate of economic planning tasks being done by computer and a complex of system-wide support, and it also has the design, operating and acceptance-transfer documentation anticipated by the technical assignment on developing the system.

The system's first line was developed based on the level of development of the methods and data base of planning, the state of data-processing technology and organization, and the level of personnel preparedness which would be attained when the system would be put into operation, that is, by 1977. The make-up of the technical means with which planning agency computer centers were equipped at that time also had a great influence on the content of the first line. The specific feature of this ASPR line is that it not only reflects the results of planning-investigation work done during the course of setting it up, but also that extensive experience has been accumulated in developing and making practical use of economic-mathematical methods and models in planning, experience accumulated over a number of years preceding development of the ASPR.

In setting up the first line during the Ninth and part of the 10th five-year plans, we performed a complex of scientific-research and planning work whose results are represented in the following types of documentation: at the system-wide level -- the technical assignment for the system as a whole, the draft plan; at the functional level -- the technical assignment for the functional subsystems, technical plans for these subsystems and working drafts for their first lines, with the necessary operating documentation for each task being introduced.

From the methods point of view, the most important result of the work done when setting up the first ASPR line has been to substantiate planning resolutions recorded in the corresponding documents, central among which is the ASPR draft plan (4). It contains the fundamental decisions on designing the ASPR, introducing it in stages, and operation of the ASPR as a whole and of its subsystems. This plan concretizes and develops those fundamental postulates in the area of the goals, functions and content of system design and operation which were recorded in the technical assignment to develop it, with consideration of experience in system design and scientific-research developments.

The draft plan includes the following documents: 1) "System-Wide Resolutions," 2) "Methods," 3) "Data," 4) "Mathematics," 5) "Equipment," 6) "Technology," 7) Personnel," 8) "Organization and Structure," 9) "Legal Questions," 10) "Management of the National Economic Plan Development Process," 11) "ASPR at the Republic Level."

"System-wide resolutions" occupy a special place in the draft plan, since they contain in concentrated form the unified view of practical planning workers and associates of scientific-research organizations of the USSR Gosplan and USSR Academy of Sciences on fundamental questions of improving planning, creating and operating the ASPR (5) which are then developed and concretized in subsequent plan documents. At the same time, individual positions in this document were formulated only problematically and must receive needed development in subsequent stages of ASPR planning.

Documents 2) through 10) contain planning resolutions on ASPR subsystems which define for each of them the composition and structure, methods and organization of the design and introduction, content and principles of operation, and compatibility of a given subsystem with others within the ASPR framework and with ministry and department automated control systems.

Document 11), while an inseparable component of the ASPR draft plan as a whole, also represents a relatively independent section containing planning resolutions for republic-level ASPR. On the basis of the overall concept of ASPR development, it lays out the features of setting up, structure and operation of union republic gosplan automated systems.

The draft plan defines the ASPR as a system for developing state economic and social development plans and monitoring their execution given the well-developed use of economic-mathematical methods and computer equipment, appropriate support technology, work organization and personnel.

Based on generalization of the experience of socialist planning and the latest achievements of economic theory, cybernetics and other sciences, the draft plan describes comprehensively and topically the methodology, methods and technology of developing a system of long-range and current plans which ensure actualization of the directions outlined in party and government resolutions on improving planning on the basis of modern methods and means of processing data. In this regard, there is a functional description (in the form of functional-structural charts (6)) of the operation of central planning agencies and their subdivisions at each stage of the compilation of long-, medium- and short-range plans and an examination of projected planning processes and tasks whose actualization will ensure the interlinking of all types of state economic and social development plans, the unity of their branch, territorial and program cross-sections.

The draft plan materials define the economic-mathematical models to be used in ASPR summary and branch subsystems under different operating procedures and at different planning stages, as well as methods of coordinating, optimizing and balancing individual plan sections with each other (7). These methods and models are oriented towards the use of computer equipment and a complex of data-processing equipment; they propose restructuring the technological processes whereby data is processed when solving planning tasks and require the introduction of changes, refinements or even supplements to existing legal norms for planning, and in certain instances, the organizational restructuring of planning agencies and of their interaction; they necessitate the retraining of planning workers.

It should be noted that decisions made in the ASPR draft plan are a good scientific-methods foundation for continued improvement in planning on the basis of economic-mathematical models and electronic computer equipment not only in the USSR and union republic gosplans, but also in the ministries and departments, and that they create the requisites necessary for coordinating the introduction of planning subsystems in the ASU's of branches, associations and enterprises.

Much attention was paid in work on the first ASPR line to the technical plans for functional subsystems and to the working plans for their first lines, plans in which the fundamental decisions in the system's draft plan were brought down to the level of concrete design resolutions, methods and algorithms.

The first line of the USSR Gosplan ASPR contains 50 functional subsystems (10 summary and 40 branch), with all the design documentation (subsystem technical assignment, technical plan and first-line working plan) having been worked out for 40 of them. Groups of tasks with the necessary working documentation have been accepted for use for nine subsystems, which include: "Fuel-Energy Complex," "Material Balances and Distribution Plans," "Summary Plan for Machine Building and Metalworking," "Petroleum Extraction Industry," "Coal, Peat and Shale Industry," "Ferrous Metallurgy," "Geology and Minerals Prospecting," "Timber and Wood Processing Industry." A description of the first line of the USSR Gosplan ASPR functional subsystems is given in Table 1,

where TA is the technical assignment, TP -- technical plan, WP -- working plan, WD -- task working documentation and dashes signify lack of corresponding document for that particular subsystem.

Table 1.

subsystem	technical assignment	technical plan	working plan	number of tasks
summary national economic plan	TA	TP	WP	57
material balances and distribution plans	TA	TP	WP	80
labor and personnel	TA	TP	WP	47
capital investment	TA	TP	WP	75
territorial planning and placement of productive forces	TA	TP	WP	24
introduction of computer equipment into the national economy	TA	TP	WP	3
foreign economic ties	TA	TP	WP	251
prime cost and profit	TA	TP	WP	39
planning and surveying	TA	TP	WP	18
summary plan for machine building and metalworking	TA	--	WD	5
fuel-energy complex	TA	TP	WD	36
power and electrification	TA	TP	WP	17
coal, peat and shale industry	TA	TP	WD	1
ferrous metallurgy	TA	TP	WP	6
nonferrous metallurgy	TA	TP	WD	6
chemical industry	TA	TP	WP	4
petrochemical industry	TA	TP	WP	13
petroleum extraction industry	TA	TP	WD	11
oil refining industry	TA	TP	WP	5
gas industry	TA	TP	WP	27
electrical engineering industry	TA	TP	WP	1
chemical and petroleum machine building	TA	TP	WP	3
machine tool and tool-making industry	TA	TP	WP	4
instrument making	TA	TP	WP	35
tractor and agricultural machine building	TA	TP	WP	3
machine building for light and food industry	TA	TP	WP	4
repair of oceangoing civilian ships	TA	TP	WP	12
timber and wood processing industry	TA	TP	WP	2
pulp and paper industry	TA	TP	WP	4
building materials and glass industry	TA	TP	WP	10
light industry	TA	TP	WP	36
food industry	TA	TP	WP	11
fishing industry	TA	TP	WP	3

microbiological industry	TA	TP	WP	8
local industry	TA	TP	WP	3
personal services	TA	TP	WP	6
agriculture	TA	TP	WP	74
forestry	TA	TP	WP	11
transport	TA	TP	WP	26
communications, radio, television	TA	TP	WP	8
construction and construction industry	TA	TP	WP	22
geology and prospecting	TA	TP	WP	2
trade	TA	TP	WP	6
housing construction	TA	TP	WP	2
municipal services	TA	TP	WP	12
public health	TP	TP	WP	28
public education	TA	TP	WP	26
higher and secondary special education	TA	TP	WP	31
printing industry	TA	TP	WP	7
vocational-technical education	TA	TP	WP	8
total	50	49	(45)5*	1,133
including by subsystem:				
summary	10	9	(9)1	635
branch	40	40	(36)4	498

(The table does not include the subsystems "Introduction of Scientific and Technical Achievements Into the National Economy" and "Road-Construction and Municipal Machine Building," which were not part of the first line of the USSR Gosplan ASPR.)

\*The first figure is the number of working plans, the figure in parentheses is the number of sets of working documentation for the task.

The union republic gosplan ASPR first lines were drawn up based on the level of development of the methods and data base of planning, the technical means with which the union republic gosplan computer centers were equipped, the status of data processing organization and technology, and the level of personnel training in each republic. Therefore, the union republic gosplan ASPR first lines differ substantially, both in the composition of the functional subsystems developed and in the number of problems being solved using computers. The largest amount of work was done in designing and introducing ASPR first lines for the gosplans of the Ukrainian and Lithuanian SSR's, and understandably so: the gosplans of these union republics are the lead developers of automated plan computation systems at the republic level (the Ukrainian SSR Gosplan -- for republics with oblast divisions; the Lithuanian SSR -- for republics without oblast divisions). Table 2 provides an overall description of the composition of union republic gosplan ASPR first lines.

The practical results of designing and introducing the system are reflected in the aggregate of first-line tasks. Parallel scientific research, planning and development when setting up the ASPR, which enabled us to reduce the overall time involved in creating the system, necessitates the priority

Table 2. Composition of Union Republic Gosplan ASPR First Lines\*

union republic	number of subsystems			number of tasks introduced**	level of introduction		
	for which all design documentation has been developed						
	total	including	summary branch				
RSFSR	3	--	3	21	84		
Ukraine	20	6	14	3	574		
Belorussia	4	--	4	7	107		
Uzbekistan	9	3	6	7	102		
Kazakhstan	4	2	2	5	372		
Georgia	2	--	2	5	40		
Azerbaijan	2	--	2	5	26		
Lithuania	6	4	2	12	194		
Moldavia	6	3	3	13	110		
Latvia	4	3	1	4	61		
Kirgizia	6	2	4	13	105		
Tadzhikistan	2	2	--	4	57		
Armenia	3	1	2	6	56		
Turkmenia	1	--	1	14	193		
Estonia	4	1	3	4	51		
-----							

\*The data given here are as of August 1977, that is, the moment the first line of the USSR and union republic gosplan ASPR's was put into operation.

\*\*WO -- first line accepted in full for working operation; EO -- first line accepted for experimental operation; WD -- individual tasks with appropriate working documentation accepted for operation.

automation of those economic planning tasks which correspond to the methods which have evolved for developing national economic plans and which lend themselves best to solution by economic-mathematical methods and computers. The availability of a developed model, data, normative base for such tasks enables us to quickly translate them into computer terms and to use the results directly in the practical work of the USSR and union republic gosplans, ministries and departments. Certain outlays resulting from the fact that actualization of design resolutions to develop the ASPR can require partial changes in tasks already being resolved as part of its first line or even the exclusion of certain of them should be considered an unavoidable price for accelerating development of the system.

The most important factor in including economic planning tasks in the first line was the extent to which individual computations and models had been mastered in the practical work of the USSR and union republic gosplans, in their computer centers and in scientific research organizations attached to the USSR and union republic gosplans at the time the first line was to be released for operation, that is, by 1977. The influence of this final time

boundary affected the composition of the tasks of the first line: the degree of their readiness was not only the most important, but also the deciding factor, as compared with the type of task, the degree to which the tasks were linked with others and their place in the technological process of planning. In the end, the ASPR first line included tasks being resolved using computer equipment (the ASPR technical complex) and satisfying the following basic requirements: actual data functioning in the course of developing plans was used in the computations; computation results were used for specific practical purposes. The tasks were considered completely introduced if parallel calculations were not made by hand; otherwise, the tasks were accepted for experimental operation.

As is evident from the table, the ASPR first line accepted for operation about 1,100 tasks for solution by computer in the USSR Gosplan and about 2,200 tasks for solution by computer in the union republic gosplans. Among them, there are also those between which direct and feedback information ties exist. These tasks form complex first-line computations which are the initial base for further developing and improving the system, so such computations and the structure of their external information ties are oriented towards the possibility of developing through the systematic inclusion in them of newly developed tasks.

Within the framework of the USSR Gosplan ASPR first line more than 750 tasks are combined into method- and information-interlinked complexes, and their proportion is also very high in several union republic gosplans (for example, the first line of the Ukrainian SSR Gosplan ASPR contains 574 tasks, 346 of which are part of 75 complexes). Thanks to this, there is the possibility of refining the principles of synthesizing individual computations, adjusting the technology of interaction between units of an individual subsystem and [other] subsystems, of verifying the effectiveness of system-wide ASPR support systems.

The tasks of the ASPR first line encompass a majority of the state plan sections, most fully the planning of industrial production, capital investment, labor and personnel, foreign economic ties, public education, culture and public health, material balances and distribution plans, and others.

In terms of methods, the tasks comprising the first line can be broken down into two classes: data processing, and those solved using economic-mathematical models. We conventionally delineate two types of tasks within the first class: information-reference and types of direct plan computations; within the second -- those solved using matrix models (first type), those solved using optimum planning models (second type) and those solved using mathematical-statistical models (third type). Of course, such a classification is quite arbitrary, but it does permit a generalized and at the same time rather a complete and concrete description of them, without examining each task individually.

Data processing tasks comprise about 80 percent of all the tasks of the USSR Gosplan ASPR first line. Approximately 40 percent of them relate to the

information-reference type, which essentially consists of processing large amounts of dictionary and digital data by computer. Such processing generally includes the operations of primary data (formal and logic) checking, data sorting, the grouping and formulation of input forms (analytical and reference tables, plan documents, extracts, and so on). For example, there is the complex of tasks accepted for operation in the first line of the "Foreign Economic Ties" subsystem. Thanks to this complex, the development of draft plans and preparation of plan documents on importing machinery and equipment, exporting complete enterprises, and on exporting and importing raw and other materials and consumer goods in exporter-nation and importer-nation cross-sections are done solely by computer in the USSR Gosplan's foreign trade department. Thus, a considerable proportion of the data received from the USSR Ministry of Foreign Trade and its foreign trade associations for the 1978 plans and then for 1979 was received on magnetic tape, avoiding paper documents, which substantially reduced time and labor expenditures on putting data into the computers. Data was corrected in the course of the plan computations using video terminals installed at the desks of department specialists and connected by communications channels to the computers of the USSR Gosplan Main Computer Center. As a result, the number of computations made by the department of foreign trade when developing draft plans has increased substantially. Resolution of such tasks without computers would have required a considerable increase in the number of personnel in this department.

At present, information-reference tasks are being resolved not only in the "Foreign Economic Ties" subsystem, but also when drawing up summary plans for industrial production and capital investment, plans for labor and personnel, prime cost and profit, contracting and planning-surveying, production in a territorial cross-section, and others. Thanks to this, under the lead plan, about 65 percent of the planning documents submitted to the USSR Council of Ministers are currently in the form of computer print-outs.

About 60 percent of the data processing tasks comprise direct plan computations. They do not require any special mathematical methods and reduce to computer runs of the simplest data transformation algorithms. They are generally based on methods of determining appropriate indicators which are stipulated in methods instructions for developing state plans or in other instruction-methods documents.

Tasks of the type being examined here enable us not only to sharply increase the accuracy and flexibility of such computations, but also to improve their quality and make more extensive use of normative methods of planning to improve the balance of plan projects. In particular, the use of computers for centralized computations of the demand for material resources in the compilation of material balances and distribution plans provides an opportunity to consider advances in the structure of material production as a result of technical progress and the accelerated development of leading branches of industry, to anticipate the economical expenditure of raw and other materials, and to ensure fuller loads on production capacities and the mobilization of internal reserves in every way possible.

Thus, centralized computer computations of the demand for material resources to produce machine-building output enabled us to expand the products list of the branch from 837 items in 1927 to approximately 9,000 in 1978 and to store and regularly up-date more than 100,000 corresponding norms in computer memories. In this regard, the introduction of adjustments in the norms and production volumes is done directly by planning workers using terminals installed in USSR Gosplan departments, which substantially accelerates calculation.

In the department of metal and pipe balances and distribution plans, computer calculations provide an opportunity (previously unavailable) to determine the demand for metal to produce prefabricated and monolithic reinforced concrete, manufacture metal components, and for other purposes.

Tasks of the direct plan computations type, just as the information-reference tasks, are being resolved in a majority of the summary and in a number of the branch USSR Gosplan ASPR subsystems, so a great deal of experience has been accumulated in resolving them using different types of computer. It is appropriate to orient large-scale complexes of data processing tasks using large amounts of data, including data coming from outside, towards large computer systems; mini-computers can be used effectively for small data-processing task complexes being resolved in individual functional subsystems or blocks of such subsystems.

It should be noted that tasks of the data-processing class have received the greatest dissemination in ASPR first lines, not only for the USSR Gosplan, but also for the union republic gosplans, which has enabled us to substantially increase the labor productivity of planning workers, to ensure a high degree of accuracy and reliability of plan computations and documents, and to improve the quality of plan substantiation.

Tasks being resolved using economic-mathematical models comprise about 20 percent of the total number of tasks in the USSR Gosplan ASPR first line. Matrix economic-mathematical models basically are represented by various charts of the interbranch balance in the "Summary National Economic Plan" subsystem. In particular, the first line includes a dynamic consolidation (in a cross-section of 18 branches of the national economy and industry) and a static detailed physical-cost interbranch balance model (with a products list including those same 18 branches of the national economy and industry, 25 industrial ministries and 260 of the most important types of output).

Using them, primarily in the initial stages of developing long-range and current plans, we are resolving tasks connected with variant computations of the rates and proportions of national economic development, with consideration of different levels of satisfying social ultimate needs, evaluating the influence of the efficiency indicators being planned for individual branches (material-, capital- and labor-intensiveness of their output) on growth in social production, refining five-year plan assignments at the level of the next year of the five-year plan, and others. Thus ensures that there will be multiple variants of the summary economic computations and

facilitates a closer coordination of national economic balance indicators with the planning projects for individual branches and types of output, with individual material balances.

In spite of the fact that individual computations in certain union republic gosplans are done using regional interbranch models, at the republic level as a whole, tasks of this type have thus far not received broad dissemination in first-line ASPR's.

Optimum planning models have been developed in 16 functional subsystems of the USSR Gosplan ASPR first line. Optimization models are being used to resolve 132 tasks, including 37 in the "Agriculture" subsystem, 22 in the "Fuel-Energy Complex" subsystem, 13 in the "Transport" subsystem, 12 in the "Repair of Oceangoing Civilian Ships" subsystem, 10 in the "Petrochemical Industry" subsystem and nine in the "Light Industry" subsystem (8).

Most widespread among them are tasks of optimizing the development and distribution of production. For complexes and individual branches and types of production, their solution will enable us to determine the best enterprise specialization and to select those variants of existing enterprise renovation and new facility construction which will meet national economic needs with the lowest expenditures. In accord with the general method, these tasks use as minimized current expenditures those capital and total (production and transport) current expenditures calculated at one moment of time. As a rule, a plan obtained on the basis of calculations using such an optimization model anticipates a substantial reduction in expenditures as compared with a variant drawn up using traditional methods. For example, optimization of the plan for developing and distributing the production of building materials provides an opportunity to save about 55 million rubles, and for individual petrochemical subbranches -- about 50 million rubles, over the five-year plan.

The models under review here are also being used very effectively to solve other economic planning tasks: making transport lines more efficient, optimizing branch and subbranch production programs and the use of production capacities. In the "Light Industry" subsystem, for example, we compute annual optimum production plans for leather footwear and tulle-curtain items with consideration of the product assortment ordered by trade organizations and the efficient expenditure of materials and use of production capacities.

About 100 optimization tasks were included in the union republic ASPR first lines, including 36 accepted for operation in the Ukrainian SSR, 26 in the Belorussian SSR, 16 in the Moldavian SSR, 15 in the Kazakh SSE and six in the Lithuanian SSR. The "Agriculture" and "Building Materials" subsystems account for the bulk of them. The economic impact of introducing these tasks is estimated to be approximately 90 million rubles.

Tasks being resolved using mathematical statistics methods have not yet been used widely in ASPR's of either the USSR or the union republic gosplans. At present, forecasting tasks (based on the simplest trend and multiple-factor

regression models) are being used primarily in the "Labor and Personnel," "Prime Cost and Profit," "Foreign Economic Ties," "Agriculture" and several other subsystems intended for the initial stages of long-range (basically five-year) plan development.

The distribution of the tasks of the two classes examined above is shown in terms of planning conditions in Table 3 (using the example of the USSR Gosplan ASPR). It is necessary to note once again the very conditional nature of the classification we have adopted: in practice, it is often hard to relate calculations unambiguously to a particular class. As a rule, the large complexes of direct planning calculations rely on corresponding information-reference systems and those being made using economic-mathematical models are incorporated into data-processing systems. These systems automate the compiling of input and the presentation of output data in a form convenient to analyze.

Table 3. Distribution of First-Line ASPR Tasks by Class and Planning Conditions, in percent

planning conditions	total number of USSR Gosplan ASPR first-line tasks	classes of tasks		
		of the total number of tasks for given planning conditions	those connected with data processing	those based on the use of economic-mathematical methods
long-range	10	60	40	
five-year	30	70	30	
annual	60	90	10	
total	100	80	20	

It is evident from Table 3 that annual planning tasks are represented most fully in the ASPR first line. This is to be explained first of all by the fact that the annual development of a current plan enables us to verify in practice the methods and means of automating planning processes more quickly and to accumulate experience in resolving corresponding tasks, while long-range planning tasks can realistically be tested only when compiling the next five-year or long-range plan, that is, no more often than once every five years. Moreover, analysis of functional subsystem technical plans shows that in total number of economic planning tasks, the proportion of data processing tasks is significantly higher in current planning than in long-range planning, the former lending themselves better to automation. This is associated with the fact that when developing an annual plan, there is a predominance of functions of coordinating, linking and balancing demand and resources across a broad products list of output and a large number of capital-holders. The level of detailization in this kind of calculations and the conditions and character of the planning resolutions accepted greatly restrict the use of economic-mathematical models in annual planning.

and at the same time provide great opportunities for using data-processing tasks. It is for good reason therefore that 90 percent of the current planning tasks in the first line of the ASPR are in the data-processing class. As a whole, the tasks accepted for operation as part of the ASPR first line comprise about 10 percent of the total number of formalized tasks outlined in functional subsystem technical plans.

At present, in accordance with the assignment approved by the State Committee for Science and Technology and the USSR Gosplan, work is expanding on planning the second ASPR line (9). This work is being set up on the basis of planning and scientific projects begun when the system's first line was developed and are natural elaborations of them. The second line will implement considerably more fully both the fundamental resolutions of the draft ASPR plan and the specific planning resolutions of the technical plans of all the functional subsystems. In this regard, the importance and vitality of the tasks facing ASPR developers will increase substantially in connection with the necessity of forcing the preparation of system-wide methods and means to carry out measures to improve planning as outlined in the CPSU Central Committee and USSR Council of Ministers Decree "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Improving Production Efficiency and Work Quality." The decree anticipates ensuring the extensive use of physical and cost production and distribution balances, production capacity balances, labor and financial resources balances and the system of planning normatives in the 11th Five-Year Plan as a result of completion of the introduction of the ASPR and with a view towards developing plan variants and optimizing planning resolutions (10, p 32). Therefore, we plan to considerably expand the aggregate of system second-line tasks which can be resolved using planning agency computers.

The decree outlines increasing the role and broadening the range of long-range balances of material, labor and financial resources (broken down by year of the five-year plan), the use of economic and engineering calculations in substantiating plan indicators, expansion of the products list planned in physical terms, the development when drawing up the national economic plan of target comprehensive scientific-technical, economic and social programs, and a number of other measures which will facilitate further increasing the amount of data being processed in planning agencies. All this dictates the necessity of accelerated development of corresponding summary and branch ASPR functional subsystems.

As the importance of the five-year plans grows, the distribution of tasks in the system's second line will change in terms of planning routines, and their quality will also be improved. Calculations using economic-mathematical models are the most efficient and at the same time the most complex type of work done in planning agency computer centers. We are dealing at this point not with direct and obvious data processing, but with the resolution of complex tasks in which actual socioeconomic processes are being described with a certain degree of adequacy by abstract mathematical language. Tasks of this class have not yet been reflected adequately in the existing methods materials, and the calculations being made using them are

new elements in the planning process which have from the very start been oriented towards modern computer equipment. Therefore, whereas data-processing tasks provide a qualitative advance foremost in the technology of planning, the use of economic-mathematical models will substantially enrich the methods arsenal of planning and create conditions for the practical implementation of the transition, outlined by the CPSU Central Committee and USSR Council of Ministers decree, to multiple-variant planning and optimization of planning decisions.

The accelerated development of tasks being resolved using all types of economic-mathematical models, given a systematic increase in the amount of data processing, will enable us to sharply increase the number of intra- and inter-subsystem economic planning task complexes being developed on a base of system-wide support systems. Expansion of the aggregate of these tasks and improvement in their quality must be accompanied by a strengthening of the technical base of planning, by corresponding development of information, mathematical, technological and personnel support for planning calculations. The most important goals in this area are the creation of automated data banks for task complexes and the continuous compatibility of the complexes through all ASPR levels, planning worker mastering of the use of computers in a dialog fashion, and the creation of conditions for the interaction of the ASPR with the automated control systems of the individual ministries and departments when developing state plans. Attainment of these goals will enable us to substantially increase ASPR efficiency and to qualitatively improve both the planning process as a whole and individual elements in it.

In reviewing the new demands being placed on planning agencies in light of the CPSU Central Committee and USSR Council of Ministers decree, Comrade A. N. Kosygin pointed out: "The chief task of the USSR Gosplan is to use improved planning methods, to ensure the unity and balance of the national economic plan, of all its sections and parts..." (A. N. Kosygin, "An Important Stage in Improving the Planned Management of the Economy," KOMMUNIST, No 12, 1979, p 22). Introduction of the ASPR must contribute importantly to solving this task.

#### BIBLIOGRAPHY

1. Lebedinskiy, N. P. "ASPR -- One of the Main Directions in Improving Planning," PLANOVYE KHOZYAYSTVO, No 9, 1973.
2. Vorob'yev, V. P. "On the Technical Assignment in Developing the ASPR," PLANOVYE KHOZYAYSTVO, No 8, 1972.
3. Bezrukov, V. B. "Organizing Work on Developing and Introducing the ASPR," PLANOVYE KHOZYAYSTVO, No 5, 1977.
4. Bezrukov, V. B., and Urinson, Ya. M. "Draft Plan -- An Expanded Concept of ASPR Design, Introduction and Operation," in the collection "Voprosy sozdaniya ASPR" [Problems of ASPR Development], 8th edition, Moscow, 1977 (USSR Gosplan Main Computer Center).

5. Fedorenko, N. P. "Tools for Optimizing Planning Decisions," KOMMUNIST, No 16, 1978.
6. Matsnev, D. A., Rayzberg, B. A., Soskov, V. F., and Urinson, Ya. M. "Functional-Structural Projects for Developing the Five-Year National Economic Plan," EKONOMIKA I MATEMATICHESKIYE METODY, Vol 13, No 2, 1977.
7. Urinson, Ya. M. "Increasing the Effectiveness With Which Economic-Mathematical Models Are Used in the ASPR," PLANOVYE KHOZYAYSTVO, No 6, 1978.
8. Romanov, I. V. "On the Use of Optimum Economic-Mathematical Models in the ASPR," PLANOVYE KHOZYAYSTVO, No 10, 1978.
9. Yun', O. M. "Directions for Improving Planning When Developing the ASPR Second Line," PLANOVYE KHOZYAYSTVO, No 10, 1978.
10. "O dal'neyshem sovershenstvovanii khozyaystvennogo mekhanizma i zad. chakh partiynykh i gosudarstvennykh organov" [On Further Improving the Economic Mechanism and the Tasks of Party and State Organs], CPSU Central Committee Decree of 12 July 1979; "Ob uluchshenii planirovaniya i usilenii vozdeystviya khozyaystvennogo mekhanizma na povysheniye effektivnosti proizvodstva i kachestva raboty" [On Improving Planning and Strengthening the Influence of the Economic Mechanism on Improving Production Efficiency and Work Quality], CPSU Central Committee and USSR Council of Ministers Decree of 12 July 1979, Moscow, Politisdat, 1979.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i matematicheskiye metody", 1980

11052

CSO: 1820

## REGIONAL DEVELOPMENT

### AGANBEGYAN ON PROBLEMS OF DEVELOPING SIBERIAN RESOURCES

Moscow MATERIAL' NO-TEKHNICHESKOYE SNABZHENIYE in Russian No 2, Feb 80  
pp 14-19

[Article by Academician A. G. Aganbegyan, director of the Institute of Economics and Organization of Industrial Production, Siberian Department of the USSR Academy of Sciences: "Expensive But...Cheaper"]

[Text] Siberia ensures the significant growth of the country's fuel resources. By the end of the Tenth Five-Year Plan, the extraction of oil throughout the nation as a whole will increase by 120-130 million tons; during the same period, oil production in Siberia will increase by almost 167 million tons. In other words, Siberia will not only account for the entire increase but will also offset the decline in oil production in a number of other regions. Siberia will for the most part also account for the increase in the extraction of natural gas. Here is an interesting comparison: given the full development of the Orenburg gas deposits, the volume of extraction of natural gas in Siberia will attain the same magnitude as the increase in the volume of extraction of gas every 1.5-2 years in the northern part of Tyumenskaya Oblast. The future development of the nation's coal industry is primarily linked to the development of the Kan-Achinskiy brown coal basin and of course to the further increase in the extraction of coking coal in the Kuzbass. This coal is already supplying both the Urals and the European part of the country. It was not by chance that Comrade L. I. Brezhnev noted in his address at the November (1979) Plenum of the CPSU Central Committee that it is necessary "to approach the increase in the rate of extraction of gas, especially in Western Siberia, still more resolutely..." and that "it is necessary to accelerate the development of the Ekibastuzskiy, Kan-Achinskiy, and Kuznetskiy fuel and energy complexes...."

More than half of all USSR hydroelectric resources are to be found in Siberia. The Irkutskaya, Bratskaya, Ust'-Ilimskaya, and Krasnoyarskaya hydroelectric power stations are in operation; the first sections of the mammoth Sayanskaya Hydroelectric Power Station have been put into operation; and construction has commenced on the powerful Boguchanskaya Hydroelectric Power Station on the Angara. But many Siberian rivers -- the Lena, Katun', Biya, Sredniy and Nizhniy Yenisey with powerful tributaries (the Nizhnyaya and Podkamennaya Tunguska, the swift Vitim, and others) -- have not as yet been developed. This is our hydroelectric reserve which is the largest in the world.

Siberia contains more than half of the nation's timber, extremely large deposits of iron ore and various kinds of nonferrous metal ores, and 20 percent of the country's total land resources: arable land and the renowned Siberian meadowland. Siberia also has vast expanses of land unsuitable for farming but suitable for industrial development! Finally, Siberia has an abundance of fresh water (more than half of all river runoff) and this is a very significant factor in the development of industry and agriculture, in the development of cities.

The zone of economic influence of BAM [Baykal-Amur Mainline] is enormous: 1.5 million square kilometers. It has only been partially studied and then only visually in the main. But the development of this zone has begun. The pioneer in the development effort -- the Neryungr'nskiy coal fields in Yakutiya -- has already delivered its first coal. A large thermal electric power station is being built nearby. Timber in the vicinity of the mainline is now being developed. The volume of geological prospecting and other preparatory work for using the mineral resources of the BAM zone has increased severalfold. This includes a vast copper ore deposit in Udokan, the unique Molodezhnoye chrysotile-asbestos deposit, the very large polymetallic deposit in northern Buryatiya, the group of tin deposits in the vicinity of Komsomol'sk-na-Amure, and various resources of Southern Yakutiya. The opinion exists that the development of the natural resources of Siberia involves higher inputs per unit of output and that this consequently lowers the effectiveness of capital investments and the output-capital ratio: in a word, that the recoupment rate of investments in Siberia is low and the payoff is long in coming.

What is the actual state of affairs with regard to the effectiveness of production in Siberia?

#### Expenditures and Results

As we know, effectiveness is made up of two components: expenditures and results. Let us assume that, other things being equal, it is two times costlier to sink a well in the West Siberian oil fields than, e. g., in Tatariya. This does not in any way indicate that the effectiveness of capital investments in Western Siberia is less. Why not? Because everything depends on the quantity of oil that is produced by the well. In Western Siberia, as we know, the production rate (hourly oil production per well) is considerably higher than in Tatariya. Accordingly, the output per unit of input proves to be greater.

Or, for example, it is known that construction in the Kuzbass is costlier than in the Donbass. But Kuznets coal is half the cost of Donets coal because it is deposited in thicker seams that are closer to the surface. The coal produced in the Kan-Achinskiy basin, where the 100-meter thick seams are very close to the surface, costs still less. And even though the construction of thermal electric power stations in Krasnoyarskiy Kray evidently costs more than in the European regions of the country, the recoupment of expenditures proves to be much higher owing to the cheapness of coal extraction and the

concentration of capacities in the production of electric power. The construction of the mighty Berezovskiy Open Pit No 1 has now begun. Here it is possible to use rotary excavators and ultimately to produce the cheapest fuel in the country.

Coal from the Kan-Achinskiy basin possesses exceptional properties that make it possible to obtain liquid fuel and various chemical products from it. It is planned to create appropriate large-scale production facilities so that the cost of the liquid fuel will quite closely approximate the cost of petroleum products. This production will evidently be organized in the Nineties.

The vast, relatively inexpensive fuel and energy resources are an important factor of the high effectiveness of industrial production in Siberia. A ton of conventional fuel in Siberia costs approximately 10 rubles less than in the European part of the country. A considerable percentage of the fuel from Siberia is transported to the European part of the country and the volume of such shipping will grow with each passing year. However, at the same time a certain part of the effect will be lost due to shipping costs. This is why it is a good idea to site energy-intensive and electricity-intensive production facilities in Siberia. During the Tenth Five-Year Plan, over 1700 million tons of hydrocarbons (calculated in terms of oil) will be produced in Western Siberia. Taking the cost of a ton of oil into account, the national economic effect for a five-year period will be expressed in the sum of 150-200 billion rubles. And even though capital investments channeled into the development of the entire complex during the quinquennium comprise a very significant sum -- 25 billion rubles, they will be recouped in a very short period of time (in roughly one year's time). It is hard to find an example of such high effectiveness. It is specifically here that particularly large sums have been invested in the creation of the developed infrastructure and these sums have been recouped in a short space of time.

Nor should the higher cost factors in Siberia be exaggerated. It is falsely believed that this region is barely habitable, that people are drawn there only by jobs and higher pay. Siberia is a vast land that varies from one part to another. It has vast temperate and southern zones that have favorable living and farming conditions. In the Minusinskiy basin, for example, melons and watermelons grow ripe, beekeeping is developed, and early vegetables (including the most delicious tomatoes) are grown in the open ground. Central Siberia, e. g., the Novosibirsk area, has a healthy continental climate. It has 1.5 more sunny days than Moscow and just as many sunny days as Kislovodsk.

The cost of producing grain, meat, milk, eggs, potatoes, and certain vegetables in Siberia is the same as elsewhere in the Soviet Union or even slightly less. The productivity of agricultural labor and the effectiveness of capital investments in agriculture [in Siberia] are higher.

Finally, the most important point. The Institute of Economics and Organization of Industrial Production of the Siberian Department of the USSR Academy of Sciences estimates that the productivity of social labor in the Siberian economy is 1.5 times higher than the all-union indicator. This advantage of Siberia will grow as technology is improved, as construction is industrialized, as a developed infrastructure is created, and as the value of water, land, fuel, and energy increases. I would like to emphasize that the effectiveness of production in Siberia is already quite high today, can be increased still further and to a very considerable degree. How can this be achieved? Primarily by sharply increasing labor productivity. Speaking of raising labor productivity and improving the use of labor resources, Comrade L. I. Brezhnev posed the task of accelerating the mechanization of manual -- especially heavy -- labor and of demonstrating greater concern for sociocultural conditions especially in the newly developed regions of Siberia, the Far East and Kazakhstan.

#### Balanced Decisions

One of the principal ways of increasing effectiveness is to achieve a greater measure of balance in the decisions and to eliminate disproportions. In other words, the comprehensive approach oriented toward the final national economic result. It is specifically the lack of completeness of the decisions that sometimes give rise to considerable outlays that could in principle be avoided.

I shall cite an example. The Medvezh'ye deposit attained the projected level of gas production. Nine gas preparation plants each costing approximately 25 million rubles have been set up there. Such outlays are to a considerable degree occasioned by the fact that many components were delivered by helicopter even though the plan called for all components to be shipped by truck. However, road construction did not begin until the deposit had reached rated capacity. Of course, outlays on construction will produce a significantly smaller effect. This does not mean that the road should not be built today. It must be built. A road is one of the main conditions to the reliable functioning of the deposit. Today special duty shift personnel are transported by helicopter even though the compactness of the deposit would make it possible to transport them by bus.

Why then was there such a delay in commencing construction on the road? Because manpower and resources were not prepared in good time. Efforts were not properly coordinated with an eye to the comprehensive development of the deposit. And after all, this was essentially part of a major regional program: the creation of the country's fuel and energy base in Western Siberia. The capital investments in this program were greater than expenditures on the construction of BAM, the Kamskiy Automotive Plant, the Volzhskiy Automotive Plant, and Atomstroy.

The decree of the CPSU Central Committee and the USSR Council of Ministers on the further improvement of the economic mechanism posed the task of improving the quality of the most important component part of the long-range plans: the program for the development of individual regions and territorial-production complexes. The decree calls for drafting proposals to improve the organizational structure of management bearing in mind, in particular, the creation of organs for managing special-purpose programs.

In our view, special leadership can be provided by a high-level commission. The commission will be made up of the heads of ministries developing the area and representatives of all-union agencies. Such a commission will make it possible to reach decisions that are binding on ministries and departments based on the final national economic result. It could meet once every two weeks to resolve the most important questions: when is it more expedient to build the road -- before or after the gas-preparation plants are put into operation? Should capital investments be redistributed in favor of river transport if the railroads fail to handle the load? This is what is meant by the comprehensive approach. At the same time, it will be possible to implement a regional technical policy more successfully. The commission will be able to have on-the-spot representatives who will solve problems that arise jointly with the management of economic organizations and local organs.

#### For Siberian Technology

The effectiveness of production today depends more and more on the development of scientific and technical progress, on technological improvement. This can be regarded as the key to the problem. The Siberian experience offers vivid evidence of this point. Siberia's riches are unusual. As a rule, they are highly concentrated. For example, one-fifth of the world's proven natural gas reserves are concentrated in the northern part of Tyumenskaya Oblast. The Orengeyskoye deposit alone (I emphasize, a single deposit) contains as much natural gas as is sometimes found in entire countries. What is more, the gas production rate here is unusually high. But new technology is required in order to extract this gas. Of course, it is possible to come to Urengoy with the old yardsticks, with the same engineering solutions that were, e. g., used in the Central Asian natural gas fields, and production will nonetheless be high. But this will not make it possible to attain efficiency of a higher order. The same parallel can also be drawn in the case of Kan-Achinskiy coal.

With the further development of technology, we will have access to riches that were previously unreachable. To date, we are skimming off the cream. In Western Siberia, oil is extracted from the uppermost horizons. If we go lower, we will find Jurassic oil. If we go still lower, we will find Paleozoic oil. If we go lower than that (we have not yet done so), it is possible that we will find still more ancient oil.

Siberia requires specially adapted technologies that take into account the severe winter and the special mining and geological conditions. They must be energy-intensive and automated in order to reduce to a minimum the labor-intensiveness of a given production process.

As yet, however, the majority of machines shipped to Siberia are not adapted to the local conditions. For example, only three percent of all motor vehicles [avtomobili] delivered to Siberia are adapted to northern conditions and are made of special, high-strength, cold-resistant steels. While such vehicles cost more to produce, the higher cost is recouped many times over.

When unadapted vehicles are exposed to extreme (-50°C) cold, their rubber crumbles, their metal parts break, and their lubricants freeze. Yet for many regions, such a temperature is standard for a certain period. Moreover, in swampy areas low temperatures create the best working conditions. Ice roads -- winter roads over which machinery moves successfully -- are built specifically in the winter time.

What radical modifications are made in a conventional truck that is operated over the 600-kilometer winter road between Mogocha-Chara and that makes the run to the famous Udekanskiy copper fields! The first thing the driver does is paint the cab red so that the truck could easily be spotted from the air by helicopter. He insulates the interior of the cab with porous plastic if he can find it or at least with ordinary felt. He also installs double glass and an additional heater in the cab. The battery (which is also not cold-resistant) is heated by exhaust gases. Winches (an absolute must on Siberian roads) are mounted. Many drivers also carry a barrel of fuel. They have to change tires. The drivers install fog lamps so that they can see through the snowstorms. Only after such primitive modernization are the trucks sent out on a run. On the whole, economists of the Yakutsk Affiliate of the Siberian Department of the USSR Academy of Sciences estimate that the annual losses from trucks that are unadapted to Siberian conditions are in excess of a half billion rubles a year.

Here is an example regarding technology. As we know, a very large system of gas pipelines links the northern part of the Tyumenskaya Oblast to the European part of the country. Compressor stations and settlements for service personnel have been built there. The distance between them is up to 100 kilometers. The construction cost of each such settlement is approximately 20 million rubles. In principle, considering today's technological level these stations need not be continuously manned by humans. Only repair and maintenance teams would have to occasionally visit these stations to inspect or maintain the equipment which of course would have to be absolutely reliable and automated to the utmost.

The situation is roughly the same at stations that remove condensate and steam from the gas (following its extraction). Each such station, and there are 10 of them at the Medvezh'ye deposit alone, in the northern part of the Tyumenskaya Oblast, is operated by service personnel that are transported by helicopter. Special buildings are built for the workers. But here too it is possible to get along without people. Instruments must monitor the course of technological processes and repair workers must occasionally check the instruments, perform preventive maintenance, etc.

Examples of places where people work even though it would be possible to get along without them are quite numerous.

The raising of power per worker [energovooruzhennost'] is one source for increasing effectiveness. The level of technical inputs per worker and especially of power per worker should be higher in Siberia than in the more habitable regions of the country. However, in a number of branches -- especially construction -- these indicators are lower than in the European part.

One more source is the development and speedy implementation of new technological solutions. For example, the search for the possibility of increasing the carrying capacity of gas pipelines has acquired all-union significance. Let us make a simple calculation. Today, the maximum diameter of the gas pipeline does not exceed 1420 millimeters. At a pressure of 75 atmospheres, the pipe with such a cross-section is capable of carrying 32 billion cubic meters of gas a year. In the Tenth Five-Year Plan, the extraction of Tyumen' gas will grow from 38 billion to 155 billion cubic meters. Thus, it will be necessary to lay four large pipelines to carry such a quantity of gas. But it would be well to get by with two pipelines. After all, what is entailed in building a pipeline? Pipe must be hauled in and this requires roads. It is necessary to prepare the bed, to dig a deep trench, to cross swamps and rivers, and to load the pipeline down with special ballast rings so that it would remain submerged.

In many regions of Siberia, it costs one million rubles a kilometer to lay gas pipelines. Therefore, it is extremely important to solve the problem of increasing the carrying capacity of gas pipelines. The Institute of Arc Welding imeni Ye. O. Paton produced an invention that is extremely important from the standpoint of effectiveness: multiple-layer pipe that makes it possible to raise the pressure to 100-120 atmospheres and thereby sharply increase the carrying capacity of the pipeline. The invention can clearly produce a colossal effect. But this requires the organization of the production of such pipe, of shut-off valves, and the appropriate automatic equipment. It requires more powerful gas pumping and refrigeration facilities. In general, this is an immense engineering problem. Much is being done to solve it now. In particular, we have already organized the experimental production of multiple-layer pipe and the construction of the appropriate enterprises is under way. Siberia is very much in need of such fundamentally new engineering solutions.

Let us examine yet another aspect associated with the transporting of drilling rigs. These rigs are very heavy even though they must be light if they are to be transported by helicopter. Before a drilling rig can be put in place and operated, it is necessary to deliver cement mortar, fuel, and various supplementary hardware. How can this best be accomplished? In our view, this can best be done with the aid of ground-effect machines. The West Siberian plain is an ideal place for using this type of transport. World practice knows examples of the operation of ground-effect platforms with a lifting capacity ranging from 100 to 1000 tons. They are very simple mechanisms but the necessary industrial base is required for their manufacture. A Tyumen' group of innovators developed a ground-effect platform for moving drilling rigs. But this was a primitive device....

There is a need to improve all-terrain vehicles which are so important and necessary under the conditions of Siberia and the North. The few all-terrain vehicles that do exist are unreliable. The need exists for powerful all-terrain vehicles with a load capacity of at least 30-50 tons. In a word, Siberia needs its own "Siberian" vehicles. When we were prospecting and beginning to develop Siberia's natural riches, we could still get by with

the machines and technologies that were developed for general use. But in view of the development of major works along a broad front today, there is an urgent need to develop special scientific and technical policy for Siberia. The decree of the CPSU Central Committee and the USSR Council of Ministers on the further improvement of the economic mechanism assigned the State Committee for Science and Technology the task of developing a program to resolve the most important scientific and technical problems and problems relating to the optimal utilization of natural resources. A program of regional technical development applicable to Siberia could be a key program of this type. A special division of the committee could develop and implement such a regional technical problem.

#### The Block Variant

It is especially important to implement purposeful technical policy in the field of construction. After all, Siberia assimilates 12 percent of all capital investments and this percentage will steadily rise. To build in the old way means falling behind and failing to realize the task on the one hand and the needless overexpenditure of resources on the other. The solution to the problem lies in the maximum industrialization of construction and particularly in the adoption of the block method of construction. This method speeds up construction 3-5 fold and significantly reduces costs. The factory fabricates the blocks and fills them with the necessary apparatus and equipment. After the blocks are delivered to the site, they are assembled to produce all manner of facilities. In the past, such facilities, e. g., pumping stations, were built from brick. Just imaging: brick was delivered to the swamp, the ground was stripped of the peat, and the foundation was built. And all this work took 14-15 months. But now the blocks arrive while the pilings are being driven into the ground. Let us say that a pumping station consists of six blocks. The station is "filled" with tested equipment that is practically ready for use. It commences operation within 2-3 months following shakedown. The fabrication of the blocks in Tyumen' is only slightly more expensive than in the European part of the country.

It must be said that Tyumenskaya Oblast has achieved major progress in this regard. The first, quite primitive blocks were initially developed in Tyumen'. They are now produced by a special plant and the large "Sibkomplektmontazh" association has been organized. The target is now to see to it that all oil field facilities are built from these blocks. It is also planned to produce gas-preparation plants and gas pumping stations from these blocks. Interesting experiments include making the transition from relatively small blocks (that could be carried on a flatcar or large truck) to very large blocks (weighing between 100 and 1000 tons) that are transported by barge and then hauled by tractor-drawn sleds to the site and put in place. By the way, some of the individual blocks used in the Alaskan oil fields weighed as much as 1500 tons. There, a special caterpillar cargo hauler was developed to transport these blocks over a specially constructed road. The block was then moved to a special pile foundation and locked in place. Unfortunately the Tyumen' experience in block package-unit construction has not been widely

diffused in the development of new regions in Siberia. Along the BAM, for example, boiler plants, pumping stations, diesel power plants, and similar facilities are built in the old way and not from block package-units. And this is understandable since an appropriate base for the production of such units has not been created.

The introduction of such units must be closely coupled with the transition to lightweight structural components (prefabricated) made from corrugated sheet steel, from insulated aluminum panels, from glued wooden components, from various finishing plastics, etc. Interesting experience in the construction of large industrial buildings from large components by the flowline method has been amassed in Krasnoyarsk and elsewhere.

The creation of a specific construction industry for the development of regions of Siberia and the North, the development and implementation of a unified technical policy in this direction are extremely urgent questions. After all, the matter is not limited to Tyumen' or the BAM. Siberia is boundless. We have not even begun to develop the vast regions of the nearby North of Eastern Siberia where very large oil and gas fields may be discovered. The time has evidently come to begin the creation of large industrial development bases. They are specifically the key to success in construction. These bases must be flexible. They must be able to serve a broad region. Their products must be ready to use.

For example, how should the northern regions of Siberia, e. g., the tundra zone, be developed? Evidently, it does not make sense to settle these regions in such a way that every square kilometer would be inhabited. People must be settled in relatively well-appointed places. But if the tundra contains deposits that people need, we must then naturally establish settlements in the tundra and perhaps even cities by combining the permanent population with special duty workers in specified points with particularly extreme conditions. Let us recall the fate of gold mines based on placer deposits. A gold mine comes into being. It operates for 15-20 years. When the gold plays out, the mine ceases to exist, and people return to the base region.

In the development of new regions, in all probability a flexible strategy must be employed. Of course, we must evidently first of all go into regions having Magadan-type support points. After all, all the resources of a vast expanse will never be exhausted.

Siberia needs such support points as Yakutsk even though it has no nearby natural resources. But this is an important base for developing the vast region. The region has natural resources, but only one-thousandth of them are used: gold, diamonds, tin (only beginning), gas for supplying Yakutsk and Pokrovsk. Only small quantities of fur and fish are procured. But the offensive launched from Yakutsk is becoming broader and broader....

The party and government decree on improving the economic mechanism creates favorable conditions -- both economic and organizational -- for effecting radical improvements in capital construction. Everything devolves on the correct technical policy.

There is yet another factor which may become decisive for the growth of effectiveness in a certain situation. This factor involves the choice of the most profitable variants of division of labor between various regions of the country. Here is a very simple example. It is possible to procure logs in Siberia and to burn the brushwood, butt ends, and tree tops. The procurement of logs is very inexpensive because there is a high concentration of top-grade timber in Siberia. But if these logs are loaded on a train and shipped to the European part of the country, their cost will quadruple en route and the entire initial effect will be lost. First, some of the lumber will not be utilized; and second, commercial lumber that is transported over long distances becomes considerably more expensive and possibly unprofitable. But the matter can be handled in a different way by creating a lumber industry complex in Siberia. The complex will receive tree trunks complete with branches and tops. They are processed on automatic lines. Everything -- brushwood, branches, etc. -- is used. Nothing is wasted. They are transformed into pulp, plywood, cardboard, etc. Such a variant will, of course, be two times, three times more efficient.

More and more Siberian branches are opting for this type of development. Therefore, even now one can speak of a new stage (which I would call the stage of intensive development) in the development of Siberia. For example, Tyumenskaya Oblast until quite recently specialized exclusively in the production of oil and gas. By-product petroleum gas was burned. But major changes took place during the Tenth Five-Year Plan. Suffice it to say that the capacities of gas refineries in Tyumenskaya Oblast by the year 1980 will comprise approximately 18 billion cubic meters of by-product gas, i. e., 80 percent of this valuable raw material will be used. The light fractions that are removed from the by-product gas will be shipped to the Tobol'skiy Petrochemical Combine and will be transformed into raw materials from which synthetic rubber and other valuable products can be produced. The remaining dry gas goes to the Surgutskaya GRES where it is used to produce power rather than merely being burned off. Some of it is sent to the Kuzbass, which means a saving of two million tons of coke. This is a new approach which consists in the more complete utilization of raw materials and consequently in attaining an additional effect. The existence of resources of by-product petroleum gas in Western Siberia make it possible to make the petrochemical plants of the Tobol'skiy Combine the largest in the world. The level of labor productivity here will be higher and expenditures on the resulting output will be lower.

We can go further and think about building a mighty gas refining complex in the Tyumenskaya Oblast. Tyumen gas is very cheap. But when it is pumped through the pipelines, its cost increases with every kilometer and trebles by the time it reaches Gor'kiy. To be sure, even then it remains advantageous for use. But it would be far more rational to produce from this gas valuable products, e. g., methanol, near the point of extraction. Methanol can be used both as a fuel and as highly valuable chemical raw material. Methanol is a liquid and can be transported through the same pipeline four times more rapidly than gas. We are thus speaking of a new, more effective degree of development associated with the in-depth processing of the raw material.

This does not mean that the final product necessarily has to be produced in Siberia. Even though Siberia has a great deal of timber, this does not mean that it should produce furniture and supply it to the central regions. Furniture should be produced at the point where it is to be used. There is no sense in producing clothing in Siberia and in shipping it to the European part of the country. I believe that beautiful clothing should be supplied to Siberia. Siberia's chemical industry obviously should not produce finished plastic products, e. g., automobile parts, and supply them to the VAZ. This would not be profitable. Each Siberian production facility must be brought to the optimal stage. In the case of petrochemistry, this would seem to be the production of semifinished products. For example, Siberia should not produce gasoline for shipment elsewhere. It is much more profitable to transport Siberian crude oil to the place of consumption, e. g., Polotsk.

V. I. Lenin brilliantly foresaw the future flowering of this bountiful land many decades in advance. Siberia bestows more and more of its riches on our people with each passing year. The perspectives of its development are truly grandiose. But we must begin thinking about tomorrow already today. We must remember that time is a material factor!

COPYRIGHT: Izdatel'stvo "Ekonomika", Material'no-tehnicheskoye snabzheniye, 1980

5013

CSO: 1820

END

## SELECTIVE LIST OF JPRS SERIAL REPORTS

### USSR SERIAL REPORTS (GENERAL)

USSR REPORT: Agriculture  
USSR REPORT: Economic Affairs  
USSR REPORT: Construction and Equipment  
USSR REPORT: Military Affairs  
USSR REPORT: Political and Sociological Affairs  
USSR REPORT: Energy  
USSR REPORT: International Economic Relations  
USSR REPORT: Consumer Goods and Domestic Trade  
USSR REPORT: Human Resources  
USSR REPORT: Transportation  
USSR REPORT: Translations from KOMMUNIST\*  
USSR REPORT: PROBLEMS OF THE FAR EAST\*  
USSR REPORT: SOCIOLOGICAL STUDIES\*  
USSR REPORT: USA: ECONOMICS, POLITICS, IDEOLOGY\*

### USSR SERIAL REPORTS (SCIENTIFIC AND TECHNICAL)

USSR REPORT: Life Sciences: Biomedical and Behavioral Sciences  
USSR REPORT: Life Sciences: Effects of Nonionizing Electromagnetic Radiation  
USSR REPORT: Life Sciences: Agrotechnology and Food Resources  
USSR REPORT: Chemistry  
USSR REPORT: Cybernetics, Computers and Automation Technology  
USSR REPORT: Electronics and Electrical Engineering  
USSR REPORT: Engineering and Equipment  
USSR REPORT: Earth Sciences  
USSR REPORT: Space  
USSR REPORT: Materials Science and Metallurgy  
USSR REPORT: Physics and Mathematics  
USSR REPORT: SPACE BIOLOGY AND AEROSPACE MEDICINE\*

### WORLDWIDE SERIAL REPORTS

WORLDWIDE REPORT: Environmental Quality  
WORLDWIDE REPORT: Epidemiology  
WORLDWIDE REPORT: Law of the Sea  
WORLDWIDE REPORT: Nuclear Development and Proliferation  
WORLDWIDE REPORT: Telecommunications Policy, Research and Development

\*Cover-to-cover

**END OF  
FICHE**

**DATE FILMED**

25 April 1980

**DD.**

